# NOTIFICATION AND SURVEILLANCE OF OCCUPATIONAL DISEASES IN CANADA AND OTHER COUNTRIES

A REPORT FOR THE FEDERAL-PROVINCIAL ADVISORY COMMITTEE
ON ENVIRONMENTAL AND OCCUPATIONAL HEALTH

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# NOTIFICATION AND SURVEILLANCE OF OCCUPATIONAL DISEASES IN CANADA AND OTHER COUNTRIES

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The research for this report was conducted between February and May 1983. It therefore describes the situation regarding notification and surveillance of occupational disease as it existed in Canada and other countries at that time. This report does not attempt to reflect the changes that may have occurred since that time.

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## TERMS OF REFERENCE

The Federal-Provincial Working Group on Occupational Health has produced a report and series of recommendations to the Federal-Provincial Advisory Committee on Environmental and Occupational Health. The major recommendation of that report, which is reproduced in Appendix A, is to establish a "national uniform system for notification of certain occupational diseases," based on a short list of acknowledged occupational diseases. According to the authors of that report, such a system would be useful in estimating trends in the incidence of occupational diseases, and would have a number of other benefits, such as early detection of disease.

The Canadian Centre for Occupational Health and Safety was asked by the Advisory Committee to research the question further and to provide a critique of the Working Group's report. We found that in researching the question, it was necessary to go beyond this narrow request and to look into the broader question of occupational disease surveillance as it is and as it could be in Canada. The present report does not constitute a detailed study of the situation as it exists in Canada. This report was constructed from what could be gained from telephone interviews with various officials and from a study of the literature.

In Part I, we outline general concepts about notification and surveillance used throughout the report.

Part II is a detailed look at each Canadian jurisdiction's present legal requirements and actual practices regarding notification of occupational diseases.

Part III reviews the existing state of affairs regarding notification and surveillance in three countries, Finland, the United Kingdom, and the Soviet Union, to provide contrast with the Canadian situation.

Part IV is our critique of the Report of the Federal-Provincial Working Group on Occupational Health.

Part V contains our summary and recommendations. Underlying our recommendations is the idea that notification should be seen not in isolation, but as part of a larger scheme for surveillance of occupational diseases.

Questions of confidentiality and medical ethics are central to any surveillance program, and we have found it necessary at various points in our report to address aspects of these questions. Nevertheless, both questions are too large to be covered in the body of this report. However, both would clearly have to be confronted and resolved by anyone considering the establishment of a notification or surveillance system.

## EXECUTIVE SUMMARY

This report was prepared by the Canadian Centre for Occupational Health and Safety for the Federal-Provincial Advisory Committee on Environmental and Occupational Health. The Working Group on Occupational Health was established by the Committee to report to it concerning a proposal to establish a national uniform system for notification of occupational diseases in Canada.

The Centre was asked to prepare a critique of the Working Group's report. Notification and Surveillance of Occupational Diseases in Canada and Other Countries is the Centre's response to this request.

In order to weigh the Working Group's recommendations, the authors of this CCOHS report attempted to assess the current disease surveillance and notification systems in each provincial and territorial jurisdiction in Canada. Most of the provincial and federal laws and regulations mentioning notification, surveillance, or reporting in connection with disease (occupational and nonoccupational) were searched for; many of them are examined in detail in Part II.

An overview of the Canadian situation is also presented, in brief. The main conclusions reached by the Centre's authors about the Canadian picture are:

- There is at present in Canada no systematic and integrated method of identifying and reporting occupational diseases.
- There are, however, useful collections of occupational disease information which could form the building blocks of a new system, for example, the data gathered by the provincial workers' compensation boards.
- There is also a great deal of information routinely collected which would be very useful if supplemented by a minimum amount of occupational data.

- In addition, there exists already in Canada the basic governmental framework on which to build an occupational disease surveillance system.

- Without a provision for and commitment to an overall occupational disease surveillance system, notification measures will not be meaningful or effective; therefore, a notification system ought to be part of a larger system of surveillance with attendant supporting mechanisms.

- The legal requirements for occupational disease notification presently in place in each jurisdiction are not comprehensive, often not fully complied with, or complied with in such a way as to undermine the intent of the law. Many informal reporting agreements exist between agencies where there is no legal requirement to report.

- The particular approach taken by the notification and surveillance effort will be decisive; for example, it can be either active or passive, hazard-based, or disease-based.

- A schedule system of occupational disease notification, as recommended by the Working Group, is not the only method that could be considered, and may not be the preferred alternative.

The Centre's report includes a review of the occupational disease notification systems in Finland, the United Kingdom, and the Soviet Union. These countries have problems and methods similar to and different from those experienced in Canada; the comparison can be instructive.

A critique of the Working Group's Report is also presented. It takes the view, generally, that the Working Group did not go far enough in its consideration of the necessary scope and nature of a national occupational disease notification system for Canada. Finally, a summary and set of recommendations from the authors of the Centre's report is provided. The twenty recommendations are presented in short form in the list following this summary.

It is hoped that the Centre's report will suggest new and useful ways of approaching the complicated matter of establishing a national occupational disease notification system in Canada.

## RECOMMENDATIONS

A more complete discussion of this summary of recommendations is presented in Part V.

1. A system for surveillance of occupational diseases should be set up in each of the thirteen jurisdictions in Canada.

2. The organization in each jurisdiction (province, territory, federal government) which should have overall responsibility for the surveillance system should be the organization that has the prime authority in that jurisdiction over occupational health and safety. In some jurisdictions, this will be a ministry of labour, in others an occupational health and safety council, and in some, a workers' compensation board. In some jurisdictions, this may be a shared responsibility.

3. Since a major source of information for the surveillance system will have to be data from workers' compensation boards, we recommend that:

   a. WCBs continue to expand the proportion of workers covered by workers' compensation;

   b. WCBs seek through their council of workers' compensation boards the achievement of greater uniformity in the conditions for acceptance of claims of occupational disease and illness;

   c. WCBs use a standard variant of the International Classification of Diseases in order to code occupational diseases;

   d. those workers' compensation boards which are not presently coding industry and occupation according to the requirements of the National Work Injury Statistics Program begin doing so;

   e. the "source of injury" Z16.2 code used by compensation boards be refined to allow greater specificity in the work hazard that resulted in an occupational disease;

   f. WCBs continue to upgrade their computer systems so that they are capable of providing occupational disease claims, statistics, or records to the occupational health and safety authority responsible for the surveillance system.

4. The health and safety authority in each jurisdiction which is responsible for the surveillance system should, as part of this responsibility, distribute claims statistics. This distribution should be to several levels:

a. to the local level;

b. to the provincial level, in the form of an annual statistical report giving accepted claims by ICD code and occupation, by ICD code and industry and by ICD code and source of injury. The report should also indicate trends;

c. to the National Work Injuries Statistics Program at Statistics Canada.

5. We recommend that an agreement be reached between the surveillance authorities in the different jurisdictions on the range of ICD codes upon which statistics will be reported. This range should include poisonings because of the sometimes difficult problem of making a distinction between acute and chronic reactions.

6. The data in the National Work Injuries Statistics Program should be enlarged to allow for these ICD codes, so that national statistics on accepted claims for occupational diseases can be compiled.

7. A person's present occupation(s) and industry should be recorded on all hospital separation forms in Canada. Preferably, this should also be accompanied by information on whether the disease or condition was caused and/or aggravated by a person's work. This occupational information should be coded using the occupational coding system presently in use by all workers' compensation boards in Canada. This information should be included in the data passed to Statistics Canada on "episodes of hospitalization." Statistics Canada should then include in its annual published reports on hospitalization various tables giving numbers of hospitalization episodes and/or length of stay by ICD code and occupation.

8. The successful implementation of recommendation #7 will depend heavily upon the efforts taken in each jurisdiction to increase the awareness of medical personnel about the relation between occupational factors and disease.

9. Efforts should be made at each provincial level to ensure that the most common (long-standing) occupation(s) of a person during that person's life is (are) routinely recorded on death certificates, that this information be of as high quality as is practical, and that it be entered into provincial mortality

files and into the national Mortality Data Base in Statistics Canada. As it now exists, the Mortality Data Base does not contain either contributing cause of death information, nor does it contain occupational identifiers.

10. Cancers should be legally notifiable diseases in all provinces, and a worker's occupational history and industry should be routinely recorded for each cancer case. Provisions should be made for capturing information on past occupations as well. This occupational information should go into the provincial cancer registries and be forwarded to the National Cancer Incidence Reporting System.

11. The occupation of the biological father and mother should be routinely recorded for all cases of stillbirths, abortions and congenital anomalies. This occupational information should be amongst the information that is forwarded to the Congenital Anomalies Register in the Bureau of Epidemiology at Health and Welfare Canada. Health and Welfare should make this occupational information available to any person with an interest in the subject, in a confidential (nonidentifiable) form.

12. We recommend that the department of government with responsibility for the operation of the surveillance system establish a position, responsible for:

a. investigating new and suspected cases of occupational disease;

b. maintaining an awareness of investigations and surveys done in workplaces for occupational health hazards;

c. gathering information and statistics from all relevant sources within their region related to occupational health. Such sources would include joint occupational health and safety committees, individual physicians, hospitals, emergency wards, employers, workers, employers or workers organizations, poison control centres and local public health officials;

d. education regarding occupational health;

e. passing information out of, and acting as a conduit for distributing information within, a region;

f. coordinating all aspects of passive and active surveillance of occupational diseases within the region;

g. co-ordinating the collection and dissemination of information resulting from medical monitoring of designated substances exposure or hazards within the region.

These responsibilities would require the combined experience of an occupational physician and an industrial hygienist. The title for this position could be Medical Officer for Occupational Hygiene and Health.

13. The surveillance system have the capability and the authority to actively survey occupational diseases.

14. A pilot project be instituted in a large metropolitan area to try out active means of occupational disease surveillance.

15. The establishment of a group at the national level to coordinate and oversee the long-term development of the occupational disease surveillance system. The national coordinating group should also be responsible for monitoring the effectiveness of the system. This is especially important since the Working Group Report's underlying assumption that "It is well recognized that effective disease surveillance (and recognition) will lead to a reduction in disease morbidity and mortality" has not been scientifically validated, as far as we are aware.

16. The national coordinating group should also be involved in providing for technical and administrative advice for jurisdictions which do not presently have the resources and experience to implement an integrated surveillance system.

17. The coordinating group should be the focal point at the national level for collecting, compiling and disseminating the statistics on occupational disease gathered from the various information sources (provincial surveillance systems, hospital separation and other medical statistics, National Work Injuries Statistics Program etc).

18. The national coordinating group should have attached to it a small technical group to analyze and process the statistics.

19. One of the main tasks of the coordinating group should be to make recommendations to the thirteen jurisdictions on specific diseases, occupations, industries, or hazards that require active investigation by those jurisdictions. The coordinating group should also make recommendations on uniform ways of collecting information based on this active occupational disease surveillance.

20. The system developed should be able not only to passively gather information on occupational disease, but also to initiate a program of information gathering and subsequent prevention with respect to a particular disease, a particular hazardous substance, or a specific process or industry.

# I. GENERAL CONCEPTS

The purpose of this introduction is to provide a conceptual framework for understanding the subject and to address some of the broader issues which underlie many of the discussions.

## I.1 OCCUPATIONAL DISEASE NOTIFICATION

Occupational disease notification is the requirement, by law, for someone to notify someone else (or some agency) that a worker has or is believed to have an occupational disease, along with additional information. Notification systems can be of different types. They may concentrate on an industry, a particular hazard, or a particular disease. The professed aim of most notification systems is a preventive one.

### Why Notify?

Occupational disease notification can be seen as one way to collect, analyse, and disseminate exposure and outcome information on occupational diseases. Some of the reasons for notification are:

- to identify new hazardous conditions at an early stage;
- to suggest preventive measures;
- to attempt to make causal associations between hazardous agents and occupational diseases;
- to generate hypotheses about the relationship between various hazardous agents and occupational diseases;
- to identify hazardous occupations or industries in need of further investigation;
- to establish baseline statistics on the incidence of occupational diseases in various occupational and industrial groups.

### Who Notifies?

The person who notifies is often a physician, either a company physician or a family physician. This is clearly the person that the Federal-Provincial Working Group on Occupational Health had in mind in its notification proposals. However, other alternatives are possible; for example, the employee or the employer could notify, or a laboratory assessing test results could notify.

## Who Is Notified?

Often, this is a governmental or quasi-governmental body such as a ministry of labour or health, or a workers' compensation board, but also could be a position within such a body such as a chief occupational health officer for a province. Other possibilities are notification to a local medical officer, to an employer, etc.

## What Is Notified?

Typically, the information falls into two categories--"exposure" information and "outcome" information. The exposure information could be information on the hazardous agent(s), the extent of the exposure, the worker's occupation or industry, etc. The outcome information of an occupational disease notification system is usually a diagnosis or presumed diagnosis. Usually there is a judgement by a physician or group of physicians that there is a relationship between the worker's condition and a exposure to a hazard at work.

## When Is Notification Done?

Usually this occurs when the worker's condition is judged to be work-related. The question, therefore, is when is the condition work-related? In many cases this may be decided by means of a predetermined schedule of diseases, in which a worker has to have a specified disease, and simultaneously be in a certain occupation or work in a certain industry, in order for his or her condition to be judged as work-related.

Another possibility is to notify when a physician judges that the worker's condition is work-related. It is around this question that many of the problems with notification systems revolve, because of difficulties in recognizing diseases as occupational in origin, or related to occupational factors.

## What Do You Do With the Information?

Included here are questions about coding and classification of the data prior to compilation (usually on a computer). There are also administrative questions such as how the whole notification system is operated. The dissemination of any resulting information and documentation also falls here.

## I.2 OCCUPATIONAL DISEASE SURVEILLANCE

Disease surveillance differs from disease notification in that additional information about hazardous agents and diseases is gathered by means other than simple one-step notification. Thus, for example, a surveillance system could contain information which is routinely gathered for other purposes, such as information gathered in the treatment of a hospital patient. In fact, it is conceivable to have an occupational disease surveillance system in which there is no occupational disease notification.

Usually, however, various sources of information are put together and connected by computer. This may involve linking together various exposure measures (such as constructing an occupational history of an individual worker); linking together various outcome measures (such as constructing a record of diagnosis for the worker over a period of time); or, and most importantly, linking together the exposure and outcome information for the workers under study. Such linking is usually done by means of a unique identifier, such as the worker's name or health insurance number.

Surveillance may be either "active," with some initiative and responsibility being taken by the information-gathering body, or it may be "passive," with the information-gathering body waiting to receive reports from people designated to notify.

## I.3 OCCUPATIONAL HEALTH SURVEILLANCE

Disease surveillance and disease notification are similar in that the object under study is a disease based on a diagnosis. However, in Canada and elsewhere there has been a tendency to gather additional types of information on the results of exposure to hazardous agents, other than a diagnosis of a disease. For example, there could be a requirement to get X-rays on miners, regardless of whether they are judged to have an occupational disease, or information on lead levels in workers in occupations routinely exposed to lead. This additional information is preclinical in the sense that an elevated blood lead level may not yet have manifested itself in overt symptoms, such that the worker would be judged to have lead poisoning.

When such additional information is gathered as part of a surveillance effort, what we have is an occupational health surveillance system. Just as there are difficulties with occupational disease notification or surveillance systems with regard to diagnosis, there are similar problems with regard to the significance of such preclinical measurements.

## II. THE CANADIAN SITUATION - BY JURISDICTION

### II.1 ALBERTA

The Alberta Workers' Compensation Act requires that a physician notify the Workers' Compensation Board by means of a claim if a worker has an industrial disease or injury. Diseases deemed to have been caused by employment are listed in Schedule B of the General Regulations (A.R. 1187/81) of the Board.

In the past, Alberta had a Regulation Respecting the Notification of Industrial Disease (A.R. 62/70), established under the Public Health Act, which specified a somewhat different schedule of occupational diseases to be notified to the Division of Industrial Health Services (whose function in this regard was assumed in 1976 by the Director of Medical Services with the Occupational Health and Safety Division, Alberta Workers' Health, Safety and Compensation). The reporting mechanism was found to be ineffective and redundant to the WCB General Regulations. These Regulations were therefore repealed in 1982.

Currently, the Director of Medical Services of the Occupational Health and Safety Division obtains information on disease claims from the statistical master file maintained on the Workers' Compensation Board computer. Division medical staff can review the complete claim if the computer information is insufficient. The Director continues to be advised of occupationally related illness by physicians both in writing and by telephone when the physician requires advice or assistance in dealing with these cases.

Section 17 of the Occupational Health and Safety Act provides for medical examinations and for designation of notifiable diseases. Where an examining physician diagnoses a designated notifiable disease, he is required to notify the Director of Medical Services and must provide whatever medical reports the Director requests.

Presently, there are five regulations which define specific diseases for which notification must take place in accordance with Section 17. These are the Noise, Asbestos, Silica, Vinyl Chloride Monomer and Coal Dust Regulations (A.R. 314/81, 7/82, 9/82, 10/82 and 243/83 respectively). Under these Regulations, the Director of Medical Services must be notified of the following occupational diseases by physicians within seven days: hearing loss which is medically diagnosed as noise-induced, asbestosis, mesothelioma, laryngeal and gastro-intestinal cancer, silicosis, pneumoconiosis, coal workers' pneumoconiosis, angiosarcoma, hepatic fibrosis and acro-osteolysis.

The silica, coal dust and asbestos regulations specify the frequency and content of examinations, including X-ray, pulmonary function test and relevant medical history. The X-rays, pulmonary function test results and medical history are forwarded to the Medical Services Branch for review. Certificates of examination are issued to all workers complying with the examination requirements and workers and/or their physician (after receipt of the worker's authorization) are advised of abnormalities detected. The certificate does not relate to fitness for work. An ongoing epidemiologic review of the results is also done.

The Regulations Respecting Industrial Radiological Technicians (A.R. 51/70) under the Radiological Technicians Act require "a certificate issued by a medical practitioner registered to practise in Alberta which details the results of a full haematological examination ..." prior to the issuance of an Industrial Radiological Technician's licence. The medical results are reviewed by the Director of Medical Services. The Regulations Respecting the Protection of Persons from the Hazards of Laser Operation require preemployment medical examinations, including an ophthalmological examination, of laser equipment workers. The results must be sent to the Radiation Health Branch of the Occupational Health and Safety Division and are reviewed by the Director of Medical Services. Both the Industrial Radiological Technician and Laser Regulations are now under review, and will soon come under the authority of a revised Radiation Protection Act.

Requirements for the notification of lead poisoning under the Regulations Respecting the Protection of Workers from the Hazard of Exposure of Lead and Lead Compounds (A.R. 3/72) and for a medical examination to be conducted on miners under the Coal Mines Safety Regulations (A.R. 333/75) are still in existence, but both are scheduled for repeal.

In practical terms, the only systematic notification of occupational diseases in Alberta takes place through the Workers' Compensation Board. The Director of Medical Services of the Occupational Health and Safety Division receives information on disease claims from the computer at the Workers' Compensation Board, and he also hears about suspected health problems in a more informal way from workers and employers.

The Director receives some written notifications from physicians as required by the regulations of the Occupational

Health and Safety Act but this notification system does not work too well. Physicians are largely unaware, it seems, of the requirements to notify under these regulations, although they are becoming more aware of the Occupational Health and Safety Division's Work. They are well acquainted with the existence of Workers' Compensation, and are familiar with the submission of claims. In addition, a claim submitted to the Workers' Compensation Board results in a payment to a physician, whereas a notification directly to the Director of Medical Services does not result in any payment to the physician. Thus, there is no financial incentive to the physician to notify the Director of Medical Services.

As mentioned above, access by the Medical Services Branch to the computerized information maintained by the Workers' Compensation Board is no problem on a case-by-case basis. However, it appears that there are significant problems in receiving statistics on occupational disease claims. One major reason for this is that the Workers' Compensation Board classifies diseases on the basis of the Z16.2 codes of the American National Standards Institute rather than the International Classification of Diseases (ICD) or its variants.

There are only 14 Z16.2 codes for occupational diseases, which means that it is a very broad classification. In consequence, it is necessary in many cases to have a combined computerized and manual search in order to estimate the incidence of a given occupational disease. It should be noted that when physicians submit claims, they either write down the diagnosis or the ICD code for the diagnosis, which they are trained to do. In many cases, they use the ICD code because this results in a more speedy handling of the claim. Thus, in many instances, there are ICD codes for individual occupational disease claims in Alberta, but this information is not currently entered into the WCB computer. However, the WCB plans to incorporate the ICD code into the computer system in the near future.

There are unofficial arrangements between the public health authorities and the Medical Services Branch regarding diseases which are both communicable and occupational. For example, if staff of the Medical Services Branch were to detect tuberculosis in a coal miner through the chest X-ray, they would notify the public health authorities. Conversely, public health authorities may notify the Medical Services Branch in the case of a communicable disease in a worker for which they first become aware.

## II.2 BRITISH COLUMBIA

### Workers' Compensation Board

The British Columbia Workers' Compensation Act requires physicians to report cases of occupational diseases to the workers' compensation board. Included in the Act is a schedule (Schedule B) of notifiable diseases. The structure of this schedule is similar to that of many other provinces, in that it not only specifies a disease but also the industrial processes or occupations that are usually associated with that disease. The presumption is that if a worker has a disease and belongs to the specified occupational group, then his disease is occupational. The physician who must notify under this act is the treating physician.

The Industrial Health and Safety Regulations of the British Columbia Workers' Compensation Board contains a section dealing with disease reports. It states

> 78.09 Disease reports. The occupational physician shall provide a medical report to the board whenever a worker claims compensation for or is suspected of suffering from an industrial disease arising out of conditions specified in regulation 78.01.

Section 78.01 refers to medical examinations of workers who are exposed to lead, mercury, free silica, asbestos, high atmospheric pressures, high temperatures, tuberculosis, or other harmful conditions which in the opinion of the Board require medical examinations or medical investigations for workers so exposed.

These sections of the Industrial Health and Safety Regulations have not yet been gazetted and so are not yet enforced.

Reports to the British Columbia Workers' Compensation Board on industrial diseases also frequently come from employers or employees submitting claim forms. Another source of reporting to the Board is annual certification of miners and divers.

CCOHS was told there is a problem with reporting certain types of occupational diseases mentioned in Schedule B. Two examples are vibration white finger and baker's asthma. A survey has revealed that somewhat over 50% of British Columbia fallers have vibration white finger, and yet there is very little reporting of this to the Board. One reason may be a worker's reluctance to report it, due to the possibility of job loss.

## 8 / Notification and Surveillance

Although baker's asthma is covered under Schedule B, and there may be several hundred cases in British Columbia, only two or three are reported each year to the Workers' Compensation Board. In part, this may be the result of underrecognition by physicians of the relationship of the asthma to a worker's occupation. In addition, some physicians may not realize that Schedule B requires the notification of this disease.

CCOHS was told a reporting problem may also arise because of the relationship between the plant physician and the treating physician, who is usually the family physician. The Workers' Compensation Act requires the treating physician to notify, while the ungazetted industrial health and safety regulations require the plant occupational physician to notify. In many cases it appears the plant physician who first detects a problem with the worker will wait for the family physician to do the notification. Complicating this division of labour over notification are the questions of medical ethics and the question of a higher fee for the first physician who notifies.

This confusion over who should report can sometimes lead to delays in reporting and may also affect the quality of the information reported.

These problems do not seem to arise, in the case of a widely recognized occupational disease, such as lead poisoning.

In British Columbia, the notification of an occupational disease which is also communicable tends to go in the first place to public health authorities.

The Statistics Section of the British Columbia Workers' Compensation Board has published a report called Occupational Diseases in British Columbia (1978-1982). The statistics in this report are based on accepted wage-loss claims, and are given separately for each subclass (a classification of industries for financial purposes). Also given in this report are the "sources of injury"; ie, the substance, chemical, etc that produced the occupational disease. In order to produce this report, the British Columbia Workers' Compensation Board reviewed all of its occupational disease claims for the last five years. They recoded the claims using a substantially enlarged version of existing ANSI Z16.2 codes for source of injury, in order that they could be specific about the substances or chemicals causing the condition. With the last five years of data, it should be possible to estimate trends in claims for occupational disease in British Columbia.

This report should be very similar to the type of report which is annually produced in Finland, based on the occupational disease register in that country. This similarity is no coincidence, because it was jointly developed by the Statistics Section and by the head of one of the regional institutes of occupational health in Finland who has been visiting the British Columbia Workers' Compensation Board for the last year.

The report will be the first in Canada of its type. Such reports should be valuable in determining occupational disease trends in various industries, and the toxic agents which are causing them.

## II.3 CANADA

### Labour Canada

The Statistics Section of the Occupational Safety and Health Branch of Labour Canada has what has been described as a "loose" agreement with the provincial worker's compensation boards to send certain parts of their statistical information to the OSH Branch. This is not required by any legislation.

While the information reported to the Statistics Section includes some small amount of disease data in summary form, the bulk of the statistical data sent by the WCBs is about fatalities. Reports on fatalities are provided by the provincial WCBs in individual form, with the exception of Québec which sends only aggregate data.

It should be noted that no individual nonfatal disease records are received by the Statistics Section of Labour Canada from WCBs. However, it may be worth finding out how many of the individual fatality records include an occupational disease as the cause of death.

Although obvious, it is worth remembering that each provincial WCB has its own way of deciding which diseases are to be considered occupational. Therefore, which diseases are reported by the WCBs to Labour Canada for inclusion in the publication, Employment Injuries and Occupational Illnesses, depends on how occupational disease is defined by each provincial WCB.

The Statistics Section also collects and publishes occupational accident and injury statistics on workers covered by the Canada Labour Code Part IV. (This amounts to about 6.5% of all workers in Canada.) The Canada Labour Code Part IV covers certain federal workers, and defines injury as follows:

> "employment injury" means personal injury, including disablement, caused by an industrial accident, occupational disease or employment hazard;

The Statistics Section and the Injury Compensation Division of the Occupational Safety and Health Branch of Labour Canada also receive notification of occupational accidents and diseases for employees covered by the Government Employees' Compensation Act. Claims for compensation are submitted to the WCB of the province where the employee is usually employed. Regional offices of Labour Canada confirm that the employee is certified and covered by the act before the claim goes to a provincial WCB for ajudication.

The Government Employees' Compensation Act covers certain employees of the Government of Canada and defines industrial disease as follows:

> "industrial disease" means any disease in respect of which compensation is payable under the law of the province where the employee is usually employed, respecting compensation to workmen and the dependents of deceased workmen.

Any employees not covered by government-funded worker compensation systems, both at the federal and at the provincial level, will not be represented in the statistics. This includes, for example, the employees of eight companies under the Merchant Seaman's Compensation Act who arrange for alternate insurance systems outside the government. Any disease cases in these companies will not be known, but could perhaps be tracked down by contacting the insurer.

## Statistics Canada

The Vital Statistics and Disease Registry Section (in the Health Division) is the official focal point for national death and disease statistics in Canada.

The Section is responsible for several programs, including two computer systems: the Canadian Mortality Data Base and the National Cancer Incidence Reporting System.

Registration of births and deaths is a provincial responsibility, but since 1919 the uniform registration of vital statistics has been going on in Canada; the first set of national vital statistics was produced in 1921. Since 1945 copies of the actual death certificates ("vital registrations") have been sent to Statistics Canada.

During the period from approximately 1920 to 1940, occupation and industry data was captured from the death certificates and coded, but this practice was stopped during wartime and never resumed. Since 1950, the cause of death has been coded.

On death certificates received by Statistics Canada there is usually something listed in the occupation section of the form, but since the median age at death is 67-68 years, more than half of the people who die are listed on the death certificate as "retired." For this reason, occupation is not coded by Statistics Canada, even though there is occupational information on many of the death certificates.

The Mortality Data Base file is derived from death certificates, and includes a machine-readable file of over 4 million records in the period 1950-1977 with coded causes of death. It is consolidated from all Canadian provinces, and contains adequate personal identifying information to carry out occupational mortality studies in Canada. Several major computer-searching operations have been carried out over the past four years using the special linkage technique developed as the Generalized Iteractive Record Linkage System (GIRLS) by Statistics Canada and the Epidemiology Unit of the National Cancer Institute of Canada.

Studies completed by means of searches of the Mortality Data Base include those on nickel workers, uranium miners, morticians, fluorspar miners, radiation workers, and a major ongoing study of a 10% sample of the Canadian male labour force.

One of the disease registry programs in Statistics Canada's Health Unit is the National Cancer Incidence Reporting System (NCIRS), which has been in operation since 1969. The NCIRS is based on reports from provincial cancer registries and covers every province regularly except Ontario. Each province reports each newly diagnosed site of primary cancer, either through a health ministry officer, or through the provincial cancer registry. Each province reports annually, with the exception of Ontario, which supplies data in batches whenever available. The basic unit of reporting is the "primary site (of cancer)," that is, newly diagnosed cases of cancer, not new individuals with cancer.

For each new primary site of cancer reported, Statistics Canada receives a record which includes demographic characteristics, residence, site of disease, and confirmation of diagnosis. No occuptional data is received by Statistics Canada for the NCIRS, although it is available at the provincial level in a few cases.

Another registration program is the Hospital Morbidity Data which is handled by the Institutional Care section of the Health Unit of Statistics Canada. This data base is not used to determine incidence of disease, but to compile a list of "episodes of hospitalization" from hospital admission and separation forms. These forms typically include demographic and diagnostic information, reason for admission, services used, data of admission and separation. No occupational information is recorded routinely on hospital forms anywhere in Canada, to our knowledge.

Statistics Canada has a Labour Division which has been responsible among other things, for managing the National Work Injuries Statistics Program (NWISP), in the Unemployment Insurance and Manpower Section. Labour Canada initiated the program to collect work injury data from each WCB in order to compile injury and illness statistics at the national level. In 1980 all provinces agreed to join the program, and to provide Statistics Canada with standardized magnetic tapes annually. However, only four provinces have submitted data so far with another three promising data.

The basic unit of measurement for the NWISP is an injury which prevents a person from performing regular work duties, beyond the date of the accident or illness report. Under the "nature of the injury" classification it may be possible eventually to isolate the injury cases which are occupational diseases, but there still is no useful published standardized data from the NWISP data base.

## Health and Welfare Canada

The legislative act establishing the mandate of Health and Welfare does not specify anything about notification of occupational disease, in particular. No one reports diseases on a regular basis directly to Health and Welfare, except for the reporting of congenital anomalies by provincial hospital authorities.

The Congenital Anomalies Register, managed by the Non-Communicable Disease section of the Bureau of Epidemiology, is the only disease information reported directly to Health and Welfare; most of the reporting of disease incidence is done to Statistics Canada. Occupation is not coded for the mothers and fathers of children with congenital anomalies, although it is considered by some Health and Welfare staff to be "highly desirable" to do so.

Based on what CCOHS has been told, it appears there seems to be a distinct underemphasis on occupational disease within the Bureau of Epidemiology at Health and Welfare Canada.

## Canadian Tumour Reference Centre

This centre was set up to be a consultative service to Canadian pathologists in order to resolve diagnostic uncertainties, by using such techniques as microscopic and X-ray analysis. Panels of experts in the recognition of particular diseases are called upon to make judgments; there is a Mesothelioma Panel, for example.

Although it has nothing to do with legal requirements for disease notification, this centre learns about many of the diseases like mesothelioma, for which accurate diagnosis is often difficult. It is possible that this centre has a better grasp of the number of mesothelioma cases diagnosed across the country than any other agency since even nonproblematic cases of this disease are often reported to it.

There is no regular official contact or cross-linking of records between this centre and any office of Health and Welfare Canada or of Statistics Canada. However, there is communication between this centre and the Epidemiology Department at McGill University. People at the Tumour Reference Centre know about epidemiological studies going on across the country, but they do not attempt to be a central reference point for such information. The director agrees that it would be useful to have a national uniform system of occupational disease notification in Canada.

## II.4 MANITOBA

### Ministry of Environment (Workplace Safety and Health Division)

Section 50 of the Manitoba Workplace Safety and Health Act, which requires reporting by physicians of cases of workplace illness, is at present "inoperative" until a Chief Occupational Medical Officer can be found.

The section requires:

> 50(1) Reports. Every physician or other qualified person attending or consulted respecting a person who:
>
> a. becomes ill or injured while employed at a workplace or while being otherwise engaged as a worker; or
>
> b. who has been examined pursuant to section 49;

> shall furnish to the Chief Occupational Medical Officer such reports concerning the condition of the person as the Chief Occupational Medical Officer may require for the purposes of this Act and the regulations.

The Workplace Safety and Health Division is hoping to persuade the Manitoba WCB to code occupation, and to enhance their information collection system by capturing statistics on disease.

There is a Manitoba regulation on asbestos being formulated. Two other regulations under the *Workplace Safety and Health Act* have been in effect for many years; the lead regulation is 25 years old and the fibrosis regulation has been in effect long enough to accumulate 20 years of data on silicosis cases.

## Workers' Compensation Board

Notification of industrial disease cases are received by the Manitoba WCB from doctors or employers, although no specific reporting requirements seem to exist in law.

The Manitoba *Workers' Compensation Act* (R.S.M. 1970 C.W. 200) seems to say very little about requirements to report work-related disease, with the exception of Section 14 (3):

> 14(3) *Notice of industrial disease*. In the case of an industrial disease, the employer to whom notice of death, disability, or suspension from employment, is to be given to the employer who last employed the workman in the employment to the nature of which the disease was due.

Where industrial disease is defined as:

> 2(1)(j) "industrial disease" means any disease that is peculiar to, or characteristic of, an industrial process, trade, or occupation to which Part I applies.

The details on Form 23, used by the WCB to convey information to the Worker's Safety and Health Division, consist of worker identification (name, age), disease, cause of disease, period of exposure and so on.

The WCBs disease information is not routinely conveyed to Statistics Canada, but is sent whenever available to the Manitoba Worker's Safety and Health Division. This is simply an arrangement between the two organizations; it is not required by law. Our impression is that the disease data collected by the Manitoba WCB may not be very accurate.

## Ministry of Health

In contrast to the "inoperative" state of the Workplace Safety and Health Act's provision for reporting of disease (Section 50), the Manitoba Public Health Act seems to be working, at least for the notification of cancer cases, which are "notifiable" under Section 1 (1) of the Regulation Respecting Diseases and Dead Bodies (P210-R2):

> 1(1) "notifiable disease" means cancer or malignant tumor or any of the communicable diseases listed in section 3, 4 and 5.

The practical result of the legal requirements in the Public Health Act P210-R2 seems to be that attempts are made by physicians in Manitoba to notify either the Manitoba Health Services Commission and/or the Manitoba Cancer Treatment and Research Foundation of every case of cancer discovered in the province.

Since there are several clearly recognized occupational cancers, making cancer a notifiable disease in this way allows awareness of this portion at least of the total occupational disease picture.

Not only is cancer a notifiable disease in Manitoba, but also there are very detailed and clearly spelled out requirements in the Public Health Act Regulation P210-R2 (Sections 2(1), 2(3), 6, 7, 8, 9, 10, 19) for reporting procedures for both notifiable and communicable diseases. The contrast with occupational disease notification is striking. The Public Health Act Regulation requires notification by physicians, clinical laboratories and hospital superintendents. Notification is to either the local Medical Officer of Health (MOH), the Director, or both. Further every MOH must keep an accurate record in writing of every case of a notifiable disease reported to him by a physician, and every other case of a notifiable disease of which he has knowledge. A MOH must send to the Director by mail, within twenty-four hours after receipt, every report of a case of a notifiable disease received by him from a physician, and full information concerning any other case of a notifiable disease of which he may be aware.

The X-Ray Safety Regulation (Manitoba Regulation 207/79) under the Manitoba Public Health Act states that:

> 221 The owner of X-ray equipment shall
>
> a. at his own expense, provide such medical examinations or tests on persons operating his X-ray equipment as may be required by the Minister; and

b. provide the medical inspector with the reports of the examination.

This is similar to the requirements of other provinces.

## Manitoba Cancer Treatment and Research Foundation

Information received by the Manitoba Cancer Treatment and Research Foundation (MCTRF) for its data bases comes from the following sources, on a routine basis:

- hospital pathology reports, with a diagnosis of cancer;
- hospital separation forms with a diagnosis of cancer, filed with the Manitoba Health Services Commission;
- death certificates with code for occupation.

The MCTRF has an agreement with the Health Services Commission that any patient information received by the latter may be made known to the MCTRF as needed; this would normally be information recorded on hospital admission and separation forms which include a diagnosis of cancer.

In addition, any positive lab reports from the Manitoba Central Health Laboratory which contain a diagnosis of cancer are to be reported to the Manitoba Cancer Treatment and Research Foundation on a routine basis.

A special study covering six workplaces over a two-year period is being developed at the MCTRF with the help of Statistics Canada to cross-link records from workplaces, unions, employers and cancer death certificates. This study is sponsored by the Workplace Safety and Health Division of the Manitoba Ministry of Environment.

## II.5 NEW BRUNSWICK

In New Brunswick, the Occupational Health and Safety Act and the Workers' Compensation Act are concerned with notification of occupational disease; both have regulations.

Under the Occupational Health and Safety Act, an industrial disease is defined as follows:

(1) "industrial disease" means any disease that the Lieutenant-Governor in Council declares to be an industrial disease.

The Occupational Health and Safety Commission which operates under the Department of Labour and Manpower has the power under Section 13(1) of the *Occupational Health and Safety Act* to order an employee to undergo a medical examination.

In section 13 (5) of this Act, the duties of a physician are outlined:

> 13(5) Where a physician
>
> a. has attended an employee who became ill or was injured while engaged in his employment, or
>
> b. has performed a medical examination under subsection 13 (1)
>
> he shall, at the request of the Commission, provide the Commission with such medical reports as it requires in relation to the employee attended or examined.

Under the *Occupational Health and Safety Act*, medical examinations are required in four occupations:

1. miners with dust exposure;
2. hoist operators in mines;
3. professional divers, and
4. compressed air workers.

However, there is no mechanism for collecting information on the results of these examinations through the Occupational Health and Safety Commission except in the case of divers. Medical records resulting from examination of miners with dust exposure are sent to the Workers' Compensation Board. Hoist operators records are maintained in the medical departments of mines. The records of examinations of compressed air workers are kept by the Power Commission.

Under section 23 of the same Act, the Lieutenant Governor in Council has the power to make regulations concerning reporting of industrial disease cases, and reporting by physicians on the nature and frequency of medical examinations:

> 23 The Lieutenant Governor in Council may make regulations
>
> j.1. respecting the reporting by physicians and others of employees suffering from, or believed to be suffering from, an industrial disease.
>
> j.2. prescribing the nature and frequency of medical examinations of employees or any class of employees.

Regulations have not yet been drafted. Thus no occupational diseases have to be reported by law at this time.

In part 32 of the regulations entitled Underwater Diving Operations of the *Occupational Health and Safety Act*, there are regulations concerning medical examinations required for divers. There are also approved medical forms for recording the results of examinations required under this section. This information is required by law to be sent to the Occupational Health and Safety Commission (Section 13(5)).

Under the *Workers' Compensation Act Regulation 67-13*, there is a list of industrial diseases (in Section 14) accepted by the Board, and there is also the requirement for the physician or surgeon to supply the board with the medical reports necessary for a claim before being entitled to payment.

> 15 No physician or surgeon shall be entitled to the remuneration from the Board for medical aid rendered to any workman unless such physician or surgeon shall furnish the Board from time to time, without additional charge, such reports as may be required by the Board in respect of such workmen and unless such reports shall have been furnished within such time as the Board deems reasonable, provided, however, that the Board may in its discretion waive this requirement of regulation.

Under section 85 entitled Industrial Diseases, the Board can require any workmen to undergo medical examinations.

The regulations do not cover farm labourers, domestic or menial servants or their employers or fishermen.

There is an informal network of information gathering but no systematic reporting of occupational diseases either through the Health Department, hospital forms, death certificates, tumour registries, medicare data, or the Poison Control Centres. Further, the WCB only use their power in gathering information about occupational diseases with respect to claims.

The Health and Safety Commission has an information-sharing arrangement with the WCB, whereby information on occupational illness claims can be retrieved, as they are reported. The only other source of information about occupational disease received by the Commission is the required medical examination of divers.

Any exposure to pesticides resulting in illness may get reported to the WCB if the person exposed is covered by the Workers' Compensation Act. Some poisonings get reported to the Poison Control Centre and these may or may not be heard about at the Commission. However, control of pesticides resides with the Pesticides Control Act under the Ministry of Environment. Sometimes the WCB hears about a poisoning from one of the Ministry of Environment inspectors.

## II.6 NEWFOUNDLAND

### Occupational Health and Safety Division

In Newfoundland, the legislation concerned with the notification of occupational diseases is the Occupational Health and Safety Act.

Section (56) of this act entitled Medical Examinations states that the Chief Occupational Medical Officer may require a worker to be examined by a physician to determine whether he is suffering from an occupational disease. In (58) it states:

> 58 Duty of Physician. Where a physician finds that a person examined by him has an occupational disease he shall, within seven days of his diagnosis,
>
> a. notify the Director, in writing, of the name, address and place of employment of the person and the nature of the occupational disease, and
>
> b. notify the person examined by him that he has an occupational disease and the nature of that disease.

In addition, section 59 of the Occupational Health and Safety Act enables the Occupational Health and Safety Division to register workers who are known to be in hazardous occupations.

> 59(1) Registration of Workers in Hazardous Occupations. Where a worker
>
> a. is engaged in an occupation described by the regulations as a hazardous occupation, or
>
> b. works at a workplace or a class of workplace prescribed by the regulations as a hazardous workplace the employer of the worker shall, within ten days of the commencement of the worker's employment, register with the Director the name and address of the worker and the location of the workplace.

(2) where a worker is registered under subsection (1) the Director

a. may require that person to have medical examinations of the kind and frequency prescribed by the Chief Occupational Medical Officer, and

b. may prescribe the form, content and maintenance of medical records to be compiled with respect to the worker.

Further, under subsection 60, a physician shall upon the request of the Chief Occupational Medical Officer be required to give medical reports on workers.

60 Furnishing of Medical Reports. Where a physician

a. has attended a worker who became ill or was injured while engaged in an occupation, or

b. has performed a medical examination under section 56;

he shall upon the request of the Chief Medical Occupational Officer, give him such medical reports on worker as he may require,

(2) notwithstanding the provisions of the Hospital Act, 1971, every hospital shall, upon the request of the Chief Occupational Medical Officer, give him such hospital records prepared by the staff of the hospital as he may require that relate to medical treatment given to a worker who became ill or was injured while engaged in an occupation.

Although it is not referred in the foregoing sections of the act, there is also in the Occupational Health and Safety Regulations of 1971 a section devoted to Notifiable Occupational Diseases which includes a schedule of notifiable occupational diseases. Section 24 (1) states that the occupational diseases for which notification is required under section 58 of the Occupational Health and Safety Act are listed in the schedule which accompanies it.

Under this same section 24(5), the Director also has the power to cause the Advisory Council to review the list of Notifiable Diseases at least annually (24(2)). As well, he may prescribe the kind and frequency of medical examinations required by workers engaged in hazardous health occupations or suffering from an occupational disease. In the Section entitled

Notifiable Occupational Diseases (24(2-5)) the Division itself has the responsibility to establish a medical registry for each hazardous health occupation.

In the Occupational Health and Safety Division under the Department of Labour and Manpower, a system of registering miners has been in operation for some time and appears to be working effectively. The department requires dust exposure information as well as periodic medical exams. They have also authorized some doctors to do medical examinations and the chest X-rays that are required. Sandblasters, as an occupation, have been designated as requiring a registry. However, no medical program has been developed yet for sandblasters.

The Occupational Health and Safety Division has a computer which is linked with the computer at the WCB. All WCB information with respect to claims accepted and not accepted are accessible to this department. Apparently the other sources of information about occupational disease that come to the attention of the Occupational Health and Safety Division are from two sources; first, the minutes of the Health and Safety Committee meetings and second, investigations of District Inspectors. The Health and Safety Committees are reported to be functioning as conceived.

Another source of information about occupational illness or disease is the unions who may use this Division to report their suspicions about incidents.

## Workers' Compensation Board

In contrast to the Occupational Health and Safety Act, the Act governing the Workers' Compensation Board does not require that attending physicians report to the WCB any such notifiable occupational diseases. It is a passive reporting system wherein the claim is usually initiated by the worker and the physician's reports follow. However, the accumulation of such computerized data at the WCB is still the best source of information about the nature and frequency of occupational diseases in Newfoundland.

## Ministry of Health

The only other legislation requiring notification of disease falls under the Logging Camps Act. Under section 16, it states:

> 16 Inspector to report sickness to Ministry of Health. An inspector who observes or has cause to suspect an outbreak

> of sickness or disease among loggers or any conditions which may cause an outbreak of disease or sickness shall report the matter without delay to the Ministry of Health.

Under the Department of Health Act, amended as late as 1979, regulations still exist that overlap with the Occupational Health and Safety Act. They provide for

> 23(1)(xv) the reporting in writing by medical practitioners to the Deputy Minister or such other persons in the department as the Deputy Minister may designate of all cases or suspected cases of industrial disease.

The Department of Health Act also contains the right of the Minister to make regulations regarding:

> 23(1)(00)(xiv) the enforcement, if deemed necessary by the Deputy Minister or such other person in the department as the Deputy Minister may designate, of routine medical or laboratory examinations of workmen in occupations in which exposure to dust, fumes, gas or noxious chemicals may occur.

This legislation also gives this Ministry the power to provide for the medical supervision of particular workers in hazardous industries or processes:

> 23(1)(pp) providing for the medical supervision of persons employed in any factory, mine, workshop or industrial establishment, and prohibiting, limiting and controlling the use of any noxious materials or processes therein, where the Deputy Minister is of the opinion that there may be risk of injury by accident or disease to the health of persons employed therein.

This legislation under the Department of Health Act, is largely inoperative since the adoption of the Occupational Health and Safety Act. Formerly the Chief Medical Officer under the Occupational Health and Safety Act was deputized by the Ministry of Health to occupy the role of receiving such information that might have been required under The Department of Health Act. However, since the retirement of the Chief Medical Officer, there has been no deputization of anyone else to fulfill this role. The Occupational Health and Safety Division of the Department of Labour and Manpower still receives and records the information on reported occupational diseases.

Evidently, the informal network works well in Newfoundland. While the Health Department is not required by law to notify the Occupational Health and Safety Division about cases of tuberculosis, if the medical people consider it important they will notify that department. With respect to industrial poisonings, because the Poison Control Centres are located in hospitals, they report to the medical department under the Health Act in the majority of cases. On the other hand, the Occupational Health and Safety Division has received information about industrial poisoning from the police but no one else.

Aside from specific programs described below, occupational information is not consistently collected. The provincial Tumour Registry does not require occupational information on its forms. While death certificates have a space on the form for noting occupation, this information is very often not recorded. Apparently, the best source of occupational information located by an epidemiologist working in Newfoundland was on hospital charts. A chronic lung disease clinic operates within the Health Science Centre in St John's. This clinic requires an occupational notation on the chart, but not the complete work history because of difficulties in the collection of such information due to the extent of seasonal employment. As well, the Labrador Dust Study operates from this setting and collects detailed occupation histories from its clients.

## II.7 NORTHWEST TERRITORIES

### Occupational Health Section of the Justice and Public Services

The chief source of information that the Occupational Health Section receives about occupational diseases is through claims information from the Workers' Compensation Board. The information is limited to the claims accepted by the WCB and does not include all claims received.

The Occupational Health Section has also designated the dust exposure occupations in mining, with particular reference to exposure to silica. Through the Mining Safety Ordinance, they receive information concerning dust exposure and notification with respect to medicals and chest X-rays on an annual basis from the workers exposed. In this capacity, they act as the Registrar of miners' medicals.

### Workers' Compensation Board

Under the Workers' Compensation Ordinance established in 1977, there is no schedule of occupational diseases and no requirements to report any particular diseases or a disease related to a designated substance. Generally, the physicians report any disease they think may be work-related; 90% of claims are initiated by a physician.

Under the *Workers' Compensation Ordinance* any occupational disease must be disabling in order to be claimed as an occupational disease. Under section 2(1)(a) of the *Workers' Compensation Ordinance* it states:

> accident includes ... disablement caused by an industrial disease arising out of and during the course of the employment of the worker

This definition severely hampers the functioning of the Act with respect to disease. Because of this act, any miner who shows signs of silicosis cannot be retained since he is not yet deemed to have the disease.

In the Northwest Territories, there are particular problems with the notification of occupational disease. Ninety per cent of the workers are transient. Also, treatment of any serious disease such as cancer takes place in southern Canada in the majority of cases. A further problem is that much of the legislation in place in other jurisdictions cannot be readily adapted to the Northwest Territories. In addition there are only six facilities to diagnose and treat disease in the whole Northwest Territories.

## II.8 NOVA SCOTIA

### Workers' Compensation Board

In Nova Scotia, the main organization requiring the collection of information on occupational diseases is the Workers' Compensation Board. Under the *Workers' Compensation Act*, Part I,

> 1(1)(i) "industrial disease" means any of the diseases mentioned in schedule A and any other disease peculiar to or characteristic of a particular industrial process, trade or occupation.

Under Division 1, the scope of this Part, the following industries are excluded: farm labourers or domestic or male servants or their employers, persons employed by a city, town or municipal corporation as members of a police force or of the fire department and anyone working in a cottage industry.

As far as notification is concerned, the physician is required to furnish such reports as may be required by the board in respect to the workers who have filed a claim. In section 69 of the *Workers' Compensation Act*, it states:

> 69 *Reports by physicians to Board*. Every physician, surgeon, and hospital official attending, consulted,

> respecting, or having the care of, any worker, shall furnish to the Board from time to time, without additional charge, such reports as may be required by the Board in respect to such workers.

> 71 Report of Death in Hospital. Where the death of a worker to whom this act applies occurs while he is confined to a hospital, the hospital authority shall report the death to the Board immediately after it has occurred.

Under Division VII of Industrial Diseases Section, 73(1) an "industrial disease" is deemed to be an accident and treated as such with respect to compensation.

Attached to the Workers' Compensation Act is Schedule A Industrial Diseases.

## Department of Public Health

The only other jurisdiction concerned with occupational health and safety is the Health Department. In the Health Act, a

> "notifiable disease" means a disease the presence of which must pursuant to this act or the regulations be made known to the Director of a Health Unit, a Medical Health Officer, a Board of Health or other officer.

In section 11 under "notifiable diseases," the Ministry has the power to designate

> "diseases as notifiable diseases, requiring reports respecting them and prescribing precautions to be taken to prevent them from spreading."

Under the Health Act regulations approved by the Lieutenant-Governor in Council of Nova Scotia on December 21, 1976, the Director of the Occupational Health Division of the Department of Public Health can issue a notification order with respect to a medical examination. This occurs in section 10 of the Health Act Regulations under Medical Examination:

> 10 Medical Examination. Where in the opinion of the Director in respect of any occupational health hazard to which these regulations apply, a medical examination is indicated, the requirements shall be defined in a notification order signed by him.

The notification order means any order issued pursant to section 7 of these regulations.

> 7(1) Notification order. Where after an inspection or investigation made in connection with these regulations, it can be shown that an occupational health hazard exists and that the employer has been advised of the hazard, its extent and implication, then the employer shall be issued with a notification order.

Thus it appears that the Director can issue the employer with a notification order requiring medical examinations and the results from them.

Nova Scotia appears to have a rather unique organizational structure concerning occupational health. There is shared jurisdiction for occupational health and safety, with the responsibilities of each participant defined as follows:

The Workers' Compensation Board is responsible for statistics and safety education as well as the handling of claims.

The Department of Labour & Manpower, and the Department of Mines & Energy are responsible for inspection and enforcement of regulations.

The Department of Health is responsible for consultations, provision of occupational health technology and advisory services and the estabishment of realistic standards and codes of practice. The Occupational Health Division in this department can enforce occupational health regulations for employees not covered under the Departments of Labour and Manpower and Mines and Resources.

In addition the Departments of Health, Labour & Manpower, Mines & Resources and Environment as well as the Workers' Compensation Board have a standing committee on occupational health at the Director level as well as an interdepartmental committee of Deputy Ministers. These groups interact and can collectively decide to issue regulations which become law by reference in all relevant acts administered by the various departments. Information on claims for compensable occupational illnesses is collected by the Workers' Compensation Board which functions under the jurisdiction of the Minister of Labour, and is available to the Occupational Health Division.

Additionally, questions on other illnesses which may be of occupational origin are also often referred by doctors directly to the Occupational Health Division. The organizational structure thus has the capability of developing a broad surveillance system and out of that an occupational disease notification mechanism.

The extent of coverage is discribed in Schedule A, Occupational Health Regulations, section 11 of the Public Health Act, Chapter 247 of the Revised Statute of Nova Scotia 1967. It states that this act applies to one or more persons who are employed for any purpose and shall apply to all occupational groups.

As noted before, the Workers' Compensation Board does not cover all workers.

The only apparent information received by the Occupational Health Division about the nature and frequency of occupational disease is from WCB claims.

The Occupational Health Regulations, Schedule "A", are currently under revision. The promulgation of these revisions may be delayed to await recommendations of the Special Committee which has been studying Occupational Health and Safety in Nova Scotia during the year.

In the Occupational Health Division of the Department of Health the only jurisdiction designated under this division concerns the notification about lead poisoning. Within this system a few plants (1-3) have been designated and lead blood test values received directly from the laboratories. However, there are 50-60 other plants that appear to have no medical or biological surveillance program.

In the Community Health Services of the Nova Scotia Department of Health, communicable disease information is reported without occupational information being captured. The one small exception to this is when there is a food-borne illness reported which is related to an occupation.

Neither the Tumor Registry, which is funded by the Department of Health, nor Hospital Records or Vital Statistics capture information on occupation.

In Nova Scotia, workers, whether they be workers for federal Crown corporations or not, are covered by the Workers' Compensation Board of Nova Scotia. Thus, information on claims of miners is a part of a provincial notification system.

A weakness of the informal reporting relationship was uncovered in interviews with Nova Scotia officials. The WCB did not seem to share statistics or information with the Department of Labour, thus allowing it to direct attention to particular industries on the basis of long-term statistics derived from WCB claims.

In the farming industry, poisoning through the use of pesticides is generally not detected. If farm poisonings come to the attention of the Poison Control Centres, they are usually reported to the Occupational Health Division even though this is not required by law. There appears to be a good working relationship between the Poison Control Centres and the Occupational Health Division.

While the legislation concerning the notification of occupational diseases in Nova Scotia is fairly limited, there is an informal network of reporting in practice. Because the province is small, the possibility exists for the detection of disease or information concerning occupational problems through this informal network.

One of the most interesting findings in Nova Scotia was the draft of the Province of Nova Scotia Occupational Disease Notification Regulations under the authority of the Public Health Act section 101. These regulations have not been promulgated to date, since much of this data is available from the Workers' Compensation Board, and they would be, to some extent, duplicating existing services.

## II.9 ONTARIO

### Ministry of Labour

Section 26 (2) of the Ontario Occupational Health and Safety Act (R.S.O 1980) is concerned with notice of occupational illness; it states

> 26(2) Notice of occupational illness. Where an employer is advised by a worker or by a person on behalf of the worker that the worker has an occupational illness, the employer shall give notice in writing, within four days of being so advised, to a Director and to the committee, health and safety representative and trade union, if any, containing such information and particulars as may be prescribed.

In practice, however, the Ministry of Labour accepts Workmen's Compensation Board forms as "notification." The WCB Form 7s are submitted to the WCB, and then sent to Standards and Programs at the Ministry of Labour where they are sorted and further disseminated within the Ministry. Copies of disease claims go to the Occupational Health Branch. As well, the magnetic tapes of accepted WCB claims are sent to the Research Branch, where the disease claims are extracted and passed on to the Occupational Health Branch.

Under the new "System 57" from the WCB both lost time and medical aid claims will be included on the tapes sent to the Research Branch.

According to the Occupational Health and Safety Act, the Chief Occupational Health Physician is supposed to be notified by physicians about the limited fitness or unfitness of employees who have been exposed to any of the designated substances. A special check done by the Ministry on the numbers of cases of accepted lead poisoning claims found that many physicians had not reported cases of lead poisoning involving employees for which they were responsible.

When notified about an occupational communicable disease, the Ministry of Health then alerts the Ministry of Labour; this procedure is to be formalized soon. It seems that the Ministry of Health normally finds out about the disease situation first, and then, if it involves a workplace setting, the Ministry of Labour investigates it further at the workplace.

Ontario's Occupational Heath and Safety Act now has six regulated substances--lead, asbestos, vinyl chloride, mercury, coke-oven emissions and isocyanates, each with its own regulation and requirements for various types of exposure surveillance and notification. The wording of certain key provisions in each of the regulations is the same. Here are extracts from the lead regulation wording which is typical of all the others (Lead: Designated Substance. O.Reg. 536/81):

> 7(2) The lead control program shall include provisions for...
>
> > c. personal records of the exposure of a worker to lead at the work place to be maintained by the employer;
> >
> > e. records of medical examinations and clinicial tests of a worker to be maintained by a physician who has examined the worker or under whose direction the clinical tests have been performed.
>
> 14(1) The records of the exposures of each worker to airborne lead at the work place to be maintained as provided by the lead control program shall identify the worker, including his date of birth, his jobs or occupations at the work place, the results of monitoring for exposure to airborne lead in his work area and the use by the worker of respiratory equipment and its type.

> 14(2) The employer shall provide a copy of the records of the exposures of the worker to airborne lead as provided by the lead control program to the physician who examines the worker and under whose supervision the clincial tests of the worker are performed.

In addition, the records of medical examinations obtained under this Regulation and records of exposures to airborne lead must be kept in a secure place by the physician who conducted the examinations, for periods of either twenty years or forty years. Where the physician is no longer able or willing to keep the records, the records must be sent to the Chief Physician, to the Occupational Health Medical Service of the Ministry, or to a physician designated by the Chief Physician.

The Designated Substances Regulations provide also for the reporting of degrees of "fitness":

> 16(5) Where the physician advises the employer that a worker, because of a condition resulting from exposure to lead, is fit with limitations or is unfit, the physician shall forthwith communicate such advice to the Chief Physician, Occupational Health Medical Service of the Ministry.

In some cases, it is known to Ministry of Labour officials that worker medical and disease records are not sent to the Chief Physician or to a Director. They are kept in company offices and are considered to be "available for inspection," and therefore in compliance with legal requirements such as the provisions following from Sections 259 and 260 of the Regulations for Mines and Mining Plants:

> 259 Where a potentially hazardous chemical reagent has caused a medical or compensable injury,
>
> a. an annual record shall be maintained for the reagent,
>
> i. specifying its trade name and chemical composition, and
>
> ii. identifying all possible toxic chemical elements and compounds of the reagent;
>
> b. a record of the injury caused by the reagent shall be kept.
>
> 260 A copy of the records and the surveys required under sections 257, 258 and 259 shall be sent to the Director annually.

It is clear that the Ontario Ministry of Labour Occupational Health and Safety Division has had some difficulty with the record-keeping parts of their legislation. Where the records are kept by a medical officer or company doctor, some unions have objected. So far, there is no consensus among labour, government and business on how to handle confidential files; a formula acceptable to the unions has not been found.

In Ontario, one approach put forward by unions is that the information about designated substances exposure would go to family physicians and thereby prevent unwanted interference by a doctor working for the company.

This approach is seen by some Ministry officials as detrimental to the formation of a centralized collection of data which could be useful both for initial awareness of health problems, and for longer-range epidemiological studies. The idea of "data linkage" as a means of detecting previously unreported occupational diseases by such methods as occupation coding on hospital records has been suggested. However, the same type of limitations found in death certificate information might be encountered in any hospital record-keeping practices where resources for accurate and complete accounts may not be available.

## Workmen's Compensation Board

Ontario has the oldest and most widely copied schedule of industrial diseases in Canada, called the Table of Presumptive Industrial Diseases, or Schedule 3. It lists certain well recognized industrial diseases as well as the occupations which characteristically are associated with the disease.

When a worker suffers from one of the listed diseases during employment in the appropriate listed occupation, it is presumed that the employee's injury arose out of the employment. For an individual disease not listed on the Schedule, the Workmen's Compensation Board requires a claimant to prove the disability resulted from an industrial disease, and that harmful exposure at work caused the disease. The WCB has developed its own internal guidelines for recognizing a limited number of industrial diseases not on the Schedule.

The Ontario WCB Act provides for a broad, changing definition of "industrial disease," in Section 1(1)(n) below:

> 1(1)(n) "industrial diseases" means any of the diseases mentioned in Schedule 3 and any other disease peculiar to or characteristics of a particular industrial process, trade or occupation;

This list can be extended to include other diseases as they arise. The Ontario WCB collects information mainly by receiving copies of Form 7 from employers submitting claims for an injured employee. The details recorded on this form consist of information required by adjudicators in order to handle a claim; this is the main purpose for the questions asked on Form 7.

An adapted form of the International Classification of Diseases (ICD) is the coding system used to classify diseases at the WCB. This code is put onto the computer tapes which are sent to the Ministry of Labour's Research Branch, amongst other organizations.

The Ontario WCB has a few manual indexes of industrial disease claims, including asbestosis, mesothelioma and hearing loss.

Every fatality for which the Ontario WCB has accepted a claim is made known to Labour Canada. This includes fatalities resulting from industrial disease.

## Ministry of Health

A review of the new public health act, the Health Protection and Promotion Act (1983), shows that there are several references to occupational health included:

> 12(1) Every medical officer of health shall keep himself informed in respect of matters related to occupational and environmental health.
>
> (2) The Ministry of the Environment, the Ministry of Health, the Ministry of Labour or a municipality shall provide to a medical officer of health such information in respect of any matter related to occupational or environmental health as is requested by the medical officer of health, is in the possession of the ministry or municipality and the ministry or municipality is not prohibited by law from disclosing.

Not only are there these requirements with respect to knowledge and information collection, but there is also a specific requirement for the medical officer of health or for a board of health to notify the appropriate provincial ministry of any health hazard "related to" occupational or environmental health. (Section 11(1)).

Although Sections 11 and 12 of the act do not apply to the reporting of disease, but instead, the reporting of a condition or thing which may constitute a "health hazard," they are still of interest to people wanting to know about occupational disease, since they reveal a trend towards broadening the definition of health. The recognition that interministerial cooperation will be needed to maintain an adequate level of information on which to base decisions is also prophetic.

Other changes are of interest for disease notification; for example, there is a new category of disease--"reportable"--which is additional to the old "communicable" designation.

Which diseases will be recognized as "reportable" has not yet been decided. Here are the definitions from Bill 138 (Chapter 10: Statutes of Ontario, 1983. Short title is the Health Protection and Promotion Act):

> "communicable disease" means a disease specified as a communicable disease by regulation made by the Minister;
>
> "reportable disease" means a disease specified as a reportable disease by regulation made by the Minister;

It would be useful to follow the development of regulations under the Ontario Health Protection and Promotion Act, to see which diseases become "reportable." There are several sections (25, 27, 29) spelling out requirements to report such diseases.

The new public health act also contains provisions (Sections 30, 31, 32) about the duty of the physician and/or Medical Officer of Health to report deaths from reportable diseases. These provisions may have important practical implications for the operation of a national occupational disease reporting system, if the "reportable" category includes recognized occupational diseases.

Section 95 of part VIII of the Health Protection and Promotion Act outlines the powers of the Lieutenant Governor in Council in making regulations under the Act. For example, he may specify "additional" persons who shall report the existence of reportable diseases.

Regulation 838 under the Public Health Act designates the communicable diseases which are referred to in the Public Health Act of Ontario, (1982) including 52 diseases from measles to food poisoning. Presumably this regulation will not change substantially, but certain diseases listed--such as Reye's Disease--which are not communicable, will probably become part of the "reportable" disease list.

The Cancer Surveys section of the old Public Health Act (section 89), which spells out reporting requirements during a periodic survey, has not become part of the Health Protection and Promotion Act.

Another Ontario regulation of interest is the X-Ray Safety Regulation 855 under the Public Health Act of Ontario (R.R.O., 1980). Section 7 specifies that the owner of an X-ray device must arrange for the medical examination of X-ray workers under his employ when required to do so by the chief inspector. Part 3 of this section states:

> (3) The report of the examination shall be submitted to the medical inspector within a reasonable time after the examination.

Section 13, Part (b) (iv) of the X-Ray Safety Regulation 855 puts further responsibility on the X-ray device owner, asking him to "furnish such information as the inspector may request, concerning":

> (iv) where an incident involving the overexposure of any person has occurred, the technical circumstances attending the incident;

Under Section 13 the X-ray device owner must also

> d. permit a medical inspector to interview X-ray workers and facilitate his review of medical examination records pertaining to such workers.

Another special category of employees, hospital employees, is dealt with in the Hospital Management Regulation 865 under the Public Hospitals Act. In Sections 70 and 71, special notification and recording procedures are spelled out:

> 70 No hospital employee found to be suffering from active tuberculosis shall be permitted to work in the hospital and the administrator shall report the case within twenty-four hours to the medical officer of health of the municipality in which the employee resides.
>
> 71 Where a hospital employee shows evidence of tuberculosis, the administrator, within seven days of the time of the diagnosis, shall,
>
> a. give written notice of the diagnosis to the Minister and the Workmen's Compensation Board; and

> b. forward to The Workmen's Compensation Board a complete report of the medical findings, and shall keep the inspection by the Ministry of Health a copy of the complete report and of the employee's record of examinations, X-rays and tests.

Section 72 of the same regulation provides for record-keeping on hospital employees' health status, which may contain occupation-related disease information:

> 72(1) The administrator shall keep a permanent record of all examinations and tests of every employee of the hospital and, if required, shall send a copy of every record, including X-ray films, to The Workmen's Compensation Board or to the Minister.
>
> (2) The permanent record of all examinations and tests referred to in subsection 1 shall be kept by the administrator for three years after the employee has ceased to be employed in the hospital.

The Ontario Ministry of Health's statistical information is reported to the Data Control Unit at the Health Unit of Statistics Canada. This is not a mandatory reporting procedure, but an agreement. The Ministry of Health has reporting agreements with other federal departments, such as the birth anomalies register at Health and Welfare.

The Ministry of Health does not code occupation on hospital records.

## Ontario Cancer Treatment and Research Foundation (OCTRF)

This organization is mandated to provide treatment, which it does through eight treatment centres in the province, and to do cancer research. Part of the research function of this organization is the maintenance of the Ontario Cancer Registry, which attempts to link records from several different sources to establish a complete list of all Ontario cancer cases.

Since cancers are not at present "reportable" diseases, the Registry relies on "passive" reporting from these sources:

- eight cancer treatment centres around the province
- hospital medical records (HMRI)
- pathology reports
- OHIP records
- Registrar-General's mortality data tapes (includes death certificate information)

Although it could be a potentially useful and sophisticated record-linkage operation, the OCTRF's Registry is far behind in its work, due to funding difficulties. Only data for 1969-71 is now available. It is hoped that by the end of 1984, records for 1964-1976 will be available. The Registry is beginning to contribute data to Statistics Canada.

No detailed occupational information is collected from forms filled out at the cancer clinics, although there is provision on the forms used for "most recent occupation." It was felt by one OCTRF associate that it was a tragedy that it was not possible to isolate the occupation-related cancer cases in the Registry, and he expressed the feeling that it would be very useful if this could be done.

The Registrar-General's data tape, prepared from death certificate information, does not now include "occupation" as one of the coded categories. In 1980, the Registrar-General began to provide information to the OCTRF in the form of data tapes. Occupation information had been available up to 1979 from death certificates. However, it was not too useful since the description of occupation was not very specific. It was also of questionable accuracy since the source was "next-of-kin," and was generally given in terms of "lifetime" occupation instead of a complete occupational history.

A special project running from 1973 to 1979 had coded occupation information from death certificates of all males dying of cancer as the underlying cause of death. A proportional mortality analysis has been done and a preliminary report written; further analysis is planned.

## II.10 PRINCE EDWARD ISLAND

### Workers' Compensation Board

In Prince Edward Island, the only mechanism for the reporting of an occupational or industrial disease is through the requirement of the Workers' Compensation Act. Under this act

> 1(i) "industrial disease" means any of the diseases mentioned in the schedule and any other disease which by the regulation is declared to be an industrial disease.
>
> In section 81 of the Act entitled Industrial Diseases
>
> 81(1) ... the worker or his dependent shall be entitled to compensation as if the disease was a personal injury by accident and the disablement were the happening of an accident.

This is an important point, since under section 48 (3) entitled Report of Accident by Employer, accidents are notifiable (and thus so are occupational diseases):

> 48(3) Every employer who has knowledge or notice of the happening of an accident or the allegation of the happening of an accident to a worker in his employment by which the worker is disabled from earning full wages or by reason of which the worker is entitled to medical aid, shall, within three days after the accident or allegation comes to his knowledge or notice, notify the Board in writing of the
>
> a. happening of the accident and nature of it;
>
> b. time of its occurrence;
>
> c. name and address of worker;
>
> d. place where the accident happened;
>
> e. name and address of the physician or surgeon, if any, by whom the worker was or is attended for the injury;
>
> or and any other particulars required by the Board.

Note, however, this effectively requires the employer to report occupational diseases. Physicians are not required to report the occurrence of an occupational or industrial disease in Prince Edward Island.

Again in section 68(4) of the Act,

> 68(4) The Board may by order in writing require any worker in any employment to undergo medical examination to determine whether such worker is affected with an industrial disease, or, if so affected, the progress of such disease.

Thus the power exists for certain occupational diseases to be designated and required information sent to the Board upon order. The only other relevant legislation under the Workers' Compensation Act comes under the Workers' Compensation Regulations section 7:

> 7 Any disease peculiar to or characteristic of a particular industrial process, trade or occupation is declared to be an industrial disease in relation to employees of clinics, hospitals, laboratories or sanitoria.

This apparently allows the Board the option of declaring any disease to be an occupational disease in any designated industrial process, trade or occupation. It appears to have been originally intended for clinics, hospitals, laboratories or sanitoria but the wording seems to allow for a rather freer interpretation.

## Department of Health

The only other legislation not under the Workers' Compensation Act that requires notification occurs under The Hospital Act. Section 59, states that

> 59 Where a hospital employee shows signs of active tuberculosis, the administrator within seven days of the time of the diagnosis, shall
>
> a. give written notice of the diagnosis to the Workers' Compensation Board, and
>
> b. forward to the Workers' Compensation Board a complete report of the medical findings, and shall keep for inspection by the Department of Health a copy of the complete report of the employee's record of examinations, X-rays and tests.

Under section 60(1), the Act states:

> 60(1) the administrator shall keep a permanent record of all examinations and tests of every employee of the hospital and, if requested, shall send a copy of every record, including the X-ray films, to the Workers' Compensation Board or to the Department of Health.

In addition, under section 61 the Act states:

> 61 Where a medical practitioner believes or suspects that a person admitted by him to hospital is suffering from tuberculosis, he shall notify the administrator forthwith.

Thus under this act the hospital administrator must report within seven days (actually 3 days is required by the WCB by means of the defining occupational disease as being an accident). In addition, the medical practitioner who uncovers the disease also must report it to the administrator. If the particular case has occupational implications, then the Board would be notified within three days.

In practice in Prince Edward Island the reporting of occupational diseases to the Workers' Compensation Board is in the majority of cases through claims initiated by workers. Once the claim has been initiated, the physician sends all reports and documentation as required with respect to the case.

Medicare does not cover any occupational illness covered by the WCB. Fully 20-30% of the employed workforce in PEI, primarily in agriculture, fishing and tourism, is not covered by the Workers' Compensation Board, so any occupational disease cases among this group would be known only to the Medicare System.

As far as has been determined, there are no designated industries or processes under surveillance in Prince Edward Island. Thus no additional medical information is reaching the Workers' Compensation Board except through claims.

## Department of Labour

Other government departments or organizations that might potentially be concerned with a notification system receive little and dispense even less information with respect to occupational disease. The Chief Medical Officer of the Ministry of Health and Social Services who is also the Director of Tuberculosis Control captures no occupational information along with the communicable diseases and cancer cases reported to him. There also appears to be little cooperation with the Workers' Compensation Board with respect to communicable disease detection and reporting. However a close linkage appears to exist between this department and the departments of environment and agriculture.

## Occupational Health and Safety Council

On May 7, 1982, the Prince Edward Island legislature passed the Occupational Health and Safety Council Act, SPEI 1982, c. 21, which establishes a council which, amongst other things, can function:

> 11(b) to develop and maintain an occupational health and safety information system and in particular to compile and analyze statistical data for the purpose of monitoring the situation relating to occupational health and safety;
>
> 11(c) to develop and supervise the provision of technical advisory services and to disseminate information regarding occupational health and safety.

The Council would thus serve as the natural focal point for an occupational disease surveillance system. However, the Council does not as yet receive any information regarding occupational disease cases.

## II.11 QUEBEC

### Commission de la santé et de la sécurité du travail (CSST)

The Québec Occupational Health and Safety Act, under the Regulation respecting industrial establishments (May 1981) (Q.R.R., c. S-2.1, r. 8) Division II: Control of Occupational Diseases, states

> 2 Declaration of occupational diseases. Every doctor must declare to the Director the case which he knows when it concerns or when it could concern all disease due to work, all cases of intoxication from lead, phosphorus, arsenic, copper, methyl alcohol, mercury, or from their compounds, also all cases of anthrax, caisson diseases, silicosis, asbestosis or any other occupational intoxication or ailment, infectious or not, among his patients.
>
> 3 Manner of declaration. Declaration shall be made within 48 hours after the diagnosis and addressed to the director; this declaration shall include the name, address and the kind of industry of the employer and ... of the patient, the nature of the disease from which he is suffering and any other information reasonably required by the Commission de la santé et de la sécurité du travail, and shall be made on forms prepared for this purpose and furnished to physicians by the Commission de la santé et de la sécurité du travail ... Each declaration of these diseases shall be held as confidential and shall serve only the purposes of the Commission de la santé et de la sécurité du travail.

"Director" refers to the medical officer charged by the Commission de la santé et de la sécurité du travail with supervising and ensuring the salubrity of industrial establishments, mines and other similar industries and with preventing the spread of occupational diseases.

The particular health hazards associated with exposure to lead, phosphorus, arsenic, copper, methyl alcohol, mercury or their compounds are given special attention in Québec, although these substances are not "designated" in the same way as the designated substances in other provinces.

Québec also has two schedules of occupational diseases: Schedule D (Occupational Diseases) and Schedule I of the

Occupational Diseases Regulation under the *Workmen's Compensation Act*. Under these two schedules, occupational diseases are recognized as being characteristic of a particular type of work or directly related to the risks inherent in a particular type of work. These schedules include such categories as poisonings, infectious diseases, dermatoses, pneumoconiosis, diseases caused by physical agents (eg. heat) and respiratory irritations and allergies.

Also, in the regulation respecting industrial establishments, under division IV *Measures Relating to Industrial Poisons*, it is stated that:

> 11 *Physical Examination*. On advice of the Commission de la santé et de la sécurité du travail ..., any officer authorized or any inspector may exact that any employee working at the time of the visit of the inspector or an industrial operation considered dangerous to health or who did work on it during the course of the 6 months preceeding this visit, undergo a physical examination at intervals specified by one or more qualified physicians.
>
> And
>
> 12 *Reports of these examinations*. That these reports of physical examinations, must be forwarded within 48 hours to the Commission de la santé et de la sécurité du travail.

In addition, the Regulation states that there are several special measures relating to certain industrial exposures. These measures have been chosen to be used for ongoing medical surveillance. The following are condensed summaries from the Regulation:

> Division III: *Relative to Industries in Which the Workmen are Exposed to Dusts Considered Dangerous to Health*. These measures include preemployment examination, annual physical examination (including clinical examination by a respiratory physician, complete industrial and medical history, fluoroscopic and radiographic examination of the thorax), stereoscopic films at the request of the expert radiologist for workers exposed to silica or asbestos dust, physical condition of applicant (including normally developed chest with no deformity or obstruction of the upper respiratory tracts, no trace or symptoms of present or past tuberculosis and no trace or symptoms of present or past disease of the lung or the heart).
>
> Division V: *Relating to Industries Making Use of Benzol and Its Derivatives*. These measures include complete

medical examinations at least once a year, a periodical investigation into their general state of health, a periodical examination of the blood.

Division VI: Relating to Industries Involving the Handling of Lead and Its Compounds. These measures include a monthly examination of employees exposed to lead. Analysis of the blood or any other approved determination. The report to the Commission de la santé et de la sécurité du travail, within 48 hours, by the head of the plant in any case, to keep a register of the lead poisoning cases and the withdrawal from work of any employee who shows symptoms of any type of lead poisoning.

Pregnant women, who have the right to refuse work that they believe may be dangerous to themselves or to the fetus, are not required by law to notify the CSST about the state of pregnancy even if they are exposed to the above substances.

It appears that the Regulation in Québec is being followed quite closely. The CSST requires that notification of every occupationally related disease or intoxication by any of the substances described in Division II article 2 be sent to the CSST.

The mechanism of this notification is as follows:

The worker is entitled to choose his own physician for the medical examination. If this physician declares that the illness or disease is occupationally related or aggravated by this occupation, even those not notifiable according to the two schedules, he has to send a form (Notification of Occupational Disease, Division II, Article 3) to the CSST. In this case, the company may wish to have the worker examined by a physician of his own choice. If the two physicians do not agree, the Commission has the final decision in the case.

If the worker's physician does not diagnose his disease as being occupationally related or aggravated, the worker may consult other physicians without limit until he finds one who declares him occupationally disabled.

As soon as the notification of the occupational disease or intoxication is reported by a physician to the CSST, a file is opened, even if the claim is not subsequently accepted. This is also true of occupational cancers, which are considered as occupational diseases. There is no place in the tumor registry where the occupation of the worker is recorded.

Contrary to the legislation of many other provinces, farmers and fishermen in Québec are covered by workers' compensation legislation. Therefore they receive the same attention as other compensated workers. However a farmer who runs a farm with employees has to request that the CSST cover him. Family-run farms are automatically covered. In fact, any employer may also ask the commission to cover him as an individual.

Note that in all the above, a worker who does not consult a physician about a disease he believes to be occupationally related will have a file opened for his case at the CSST, but his compensation claim will not proceed any further.

In terms of statistics, all the data for these claims are available, after removal of identifying characteristics, from the CSST.

In addition to the legislation under the Occupational Health and Safety Act, there are amendments promulgated in September 1983 which cover diseases and intoxication by chemical agents. These amendments come under the Public Health Protection Act (O.C. 975-83).

Under section 1(28) four areas deal with the various diseases and intoxications by chemical agents. Subsection (a) contains such diseases as smallpox. Subsection (b) contains diseases such as food poisoning, tuberculosis, scarlet fever and so on. Subsection (c) contains diseases such as brucellosis and anthrax, and Q fever. Subsection (d) contains intoxications by chemical agents such as beryllium, sulphur and its compounds, nitric vapours, arsenic and its compounds, benzene, pesticides etc.

Most of the ones related to occupations, are contained under subsections (c) and (d).

Under section 3(30) the notification of disease must occur according to the following:

> 3(30) The diseases listed in paragraph (a) of section 28 must be declared by telephone or telegram, as soon as they are discovered by the attending physician, simultaneously to the Minister and to the Head of the Community Health Department in his territory. In addition, the attending physician must transmit the declaration within 48 hours on the form in Schedule 11.

The diseases listed in paragraph (b) and in subparagraphs i) and iii) of paragraph (d) must be declared by the attending physician to the Head of the Community Health Department in his territory within 48 hours on the form in Schedule 11.

Under Section 4(31), a positive result of a laboratory test must be communicated to the Ministry by telephone or telegram and to the Head of the Community Health Department in his territory by the Director of a Laboratory or a Department of Medical Biology.

The relevant section of the diseases which might have occupational implications, is contained in the same section.

> 4(31) The positive result of a laboratory test or a test of a department of medical biology associated with one of the diseases listed in paragraph c) must be transmitted within 48 hours, by the Director of the Laboratory or the Department of Medical Biology to the Head of the Community Health Department in his territory.

Again under section 4(31), intoxications by chemical agents are also declared.

> 4(31) The result of a laboratory test or a test of a Department of Medical Biology that shows a concentration of one of the chemicals agents listed in subparagraphs ii) and iii) of paragraph d) or of its metabolites situated at toxic levels must be transmitted to the Head of the Community Health Department in his territory by the Director of the Laboratory or Department of Medical Biology within 48 hours.

In both cases the Director of the Laboratory of Québec Public Health must transmit the test results provided for in both these sections to the head of the Community Health Department in the territory in which the patient resides.

Another part of the amendments to the Public Health legislation deals with the records that must be kept by a permit holder or corporation, partnership or association represented. Section 18(109)(c) states that a document indicating the surname, given name, address, age, sex, and previous occupation of the employee be recorded. This has signifance since in the event of a disease the past records of a person's employment can then be reconstructed.

In Schedule 2, the form to be used by a physician called "Declaration of A Disease That Must Be Declared" requires the recording of occupation.

In summary, this legislation will provide for the accumulation of considerable information on occupational disease. It provides for the reporting or notification of a wide variety of diseases and chemical intoxications. Although there has been no adoption of any particular coding for occupation, the information derived from this legislation should be considerable if in fact the occupation can be coded with any reliability.

## II.12 SASKATCHEWAN

### Workers' Compensation Board

The Saskatchewan Workers' Compensation Act 1979 (S.S. 1979, c. 17.1) says that:

> 52. Employer to notify board of injury. Each employer shall, within three days from the date he becomes aware of an injury which prevents a worker from earning full wages or which necessitates medical aid, notify the Board in writing ...

"Injury" in this case includes any disablement arising out of or in the course of employment, and thus includes occupational diseases.

The Workers' Compensation Board receives claim submissions and puts them into its computer. One notable feature of Saskatchewan is that it uses International Classification of Diseases (ICD) codes for coding all occupational injuries and diseases. In principle this would allow them to produce a detailed statistical breakdown by ICD codes. However, their computer system is oriented to financial information, and it is not possible to do statistical breakdowns by occupational disease without very expensive special programming efforts.

### Occupational Health and Safety Division, Saskatchewan Department of Labour

The Occupational Health and Safety Act (S.S. 1978, c.0-1) says that:

> 31(1) Reports to be furnished by physician, hospital, etc. Every physician or other qualified person who is attending or who has been consulted respecting a worker or self-employed person that:

a. became ill or injured while employed at a place of employment or while being otherwise engaged in an occupation; or

b. has been examined pursant to section 29; shall, upon the request of the Chief Occupational Medical Officer, furnish the officer with such reports concerning the condition of the worker or self-employed person as the Chief Occupational Medical Officer may require for the purposes of this Act.

(2) notwithstanding the provisions of any act or law enforced in the province, where a worker or self-employed person mentioned in subsection (1) is or has been a patient in a hospital, the person in charge of the administrative affairs of that hospital shall, upon request, without charge furnish the Chief Occupational Medical Officer with such reports concerning the condition of the worker or self-employed person as the Chief Occupational Medical Officer may require for the purposes of this Act.

Further, the legislation called Occupational Health and General Regulations (O.C. 567/81, Sask. Reg. 1) says:

> 65 Notification by Physicians. Every physician attending or called in to visit a worker suffering from or believed to be suffering from a disease related to the present or past employment of the worker and listed in Appendix III shall, without undue delay, inform the Director of:
>
> a. the disease from which, in the opinion of the physician, the patient is suffering; and
>
> b. the name and address of the most recent place of employment of the patient, where exposure related to the disease is believed to have occurred.

"Director" means in this case the Director of the Occupational Safety and Health Branch.

The position of Chief Occupational Medical Officer has been vacant for some time now, and in the latest Saskatchewan budget, there were no provisions for such a position. In practice, therefore, notifications go to the Chief Toxicologist in the Occupational Health and Safety Branch. There are only about two or three notifications a year from the list of diseases mentioned in Saskatchewan's Appendix III. In almost all cases, there is a corresponding claim for the disease submitted to the Workers' Compensation Board.

The Chief Toxicologist also obtains information from physicians which they are not legally required to notify. Examples of this might be calls or letters to the Department of Labour from physicians regarding particular disease cases, for assistance in diagnosis or treatment. There are also seven or eight cases a year of gasing or asphyxia reported to the Occupational Health and Safety Branch, but these are usually medical aid only, and are not generally described as cases of occupational disease.

The Occupational Health and Safety Branch has a terminal which is connected to the Workers' Compensation Board computer. Using this, the OHS Branch can get information on claims submitted for any particular firm. However, it is very difficult to get, for example, the number of cases of disease or illness related to a particular substance submitted to the WCB in Saskatchewan. This is largely a problem of coding and classification, which necessitates expensive special computer runs.

It should be noted that the regulations regarding notification of occupational disease apply only to "workers." This means that self-employed people in Saskatchewan are not included in the notification system. Because of the relatively large percentage of the Saskatchewan population which is employed in agriculture, and because less than 12% of all farmers are covered by the WCB, there is a special problem in the province regarding surveillance of occupational diseases in farmers. This is complicated by the fact that many of the occupational diseases farmers experience may be related to exposure to pesticides, which produce a whole range of symptoms which are not unique to pesticide exposure. Because of this problem, the Chief Toxicologist proposed five years ago to the Saskatchewan Health and Safety Advisory Council that there be a centralized agency in Saskatchewan surveying for pesticide exposure, similar to the surveillance system elsewhere in Canada for adverse reaction to drugs. So far, this proposal has not been acted upon.

Several years ago, the Saskatchewan Cabinet considered a scheme for the compulsory notification of all occupational diseases (ie, not just those mentioned in the Saskatchewan schedule). This proposal was not accepted. CCOHS was informed that there was substantial pressure from business against the scheme, because of their opposition to what they perceived as a substantial amount of paperwork.

## Ministry of Health

The Saskatchewan Public Health Act requires notification for a wide variety of communicable diseases. If the public health authorities are notified of a communicable disease which may also be occupational, they may contact either the Medical Health Officer for the region concerned, or the occupational health authorities. Follow-up action at the workplace is the responsibility of the occupational health authorities. This is an informal arrangement between occupational health and safety, and the public health authorities.

There are varieties of medical data which are of potential usefulness in Saskatchewan for occupational disease surveillance, if occupation were recorded on some of the appropriate forms. One source of data comes from the MCIC (physician payment) information. These physician reporting forms contain diagnoses on the patients. The medical claim system in Saskatchewan, however, sees itself as payment-oriented and also to some extent, as a watchdog over physicians. It is therefore hard to use this data for surveillance purposes at present.

Another potential source of information is from hospital separation forms. The diagnoses on these forms are generally better than those from the physician payment forms, but not all diseases are represented here, only those that would likely be treated in a hospital. There is no occupation recorded on any of these medical forms.

Other sources of medical information are from the Saskatchewan Universal Drug Plan, the Saskatchewan Cancer Foundation, and Psychiatric Services. Saskatchewan is unique in that the hospital insurance number is used in all these medical data files. This allows relatively straightforward computerized linking of records from these different databanks. In order to ensure that there is no abuse of the system, Saskatchewan has a Cross-Agency Committee which meets to appraise research projects, and to link data from these different data banks.

## Saskatchewan Cancer Foundation

Saskatchewan is unique in Canada in that a physician cannot be paid a cancer claim until the patient is sent to the Cancer Foundation. This means that the data are relatively complete and the diagnoses are fairly uniform. The Cancer Foundation records the occupation of the patient, based on an interview.

## II.13 YUKON TERRITORY

A new Workers' Compensation Act is coming into effect in the Yukon in 1983, to replace the 1973 Workmen's Compensation Ordinance. This new act, although substantially revamped, does not define occupational disease, nor does it specify any reporting requirements cases of occupational disease. The Yukon Territory enforces the provisions of the British Columbia Industrial Health and Safety Regulations.

In practice, notification of occupational diseases is accomplished as in most jurisdictions, through the submission of a claim to the Workers' Compensation Board. The Chief Medical Officer decides, sometimes with the aid of outside advice, whether the claim fits the criteria for acceptance of an occupationally related disease claim. If it can be proved that the disease is occupational in origin, then the claim is accepted. There is a very small number of such claims submitted, especially now with all the mine closures in the Yukon.

Figures from the Yukon WCB are included in the 1984 issue of the Labour Canada statistics publication, Employment Injuries and Occupational Illnesses.

In some of the smaller communities, especially the mining towns of the Yukon, there is a doctor subsidized by the mining companies; he may be the only doctor in town, and will be the person responsible also for reporting a case to the WCB for compensation, in some cases. Sometimes it would be the task of the safety officer attached to the plant, who would be employed either by the company or by the union. This situation could result in underreporting.

# III. INTERNATIONAL COMPARISON

## III.1 FINLAND

In Finland, there are two laws which set out requirements for the notification of occupational diseases. The Occupational Disease Act (638/67) was enacted in 1967. According to this act, if a physician determines that occupational factors are at least 50% responsible for a patient's disease, then the doctor must report this in the form of a claim for compensation.

One copy of the claim is kept by the doctor, one copy goes to a private insurance company (Finland does not have a system corresponding to our Workers' Compensation Boards), one goes to the medical officer for the region, and one to the Regional Office of the Labour Inspection Bureau. If the claim is accepted by the insurance company, then the Labour Inspection Bureau sends a copy to the Occupational Health Institute in Finland. This reporting to the Institute is based on a signed agreement between it and the Federation of Accident Insurance Institutes.

The 1967 Act is essentially functioning as designed. The Department of Epidemiology and Biometry of the Institute of Occupational Health keeps a register of occupational diseases which is based mainly on these accepted claims. The Institute reports to the Ministry of Social Affairs and Health, rather than to the Bureau of Labour Inspection. Because of its independence, it seems to have inspired trust among both employers and employees.

The Institute publishes an annual statistical report of the incidence of various occupational diseases based upon its register. In any year, there are typically between 4,000 and 4,500 cases in the register, which was created in 1964. There is one full-time person involved in the Institute of Occupational Health and Safety who maintains this register.

Because of the way the 1967 law is worded, there is a relatively low rejection rate of claims for occupational diseases in Finland. Similarily to the experience in British Columbia, about 7% of the claims were rejected in 1981.

Adding to the reliability of the registered cases coming from accepted claims is the fact that since 1971, occupational health services have been established in many workplaces. At present, approximately 70% of the employed labour force are covered by workplace occupational health services. In addition, there are over 1,000 physicians in Finland who are trained in occupational health. In 1982, Finland instituted a scheme for certifying physicians in occupational health specialities. In Finland, all physicians, both the occupational health physicians and nonoccupational health physicians are trained in the early detection of occupational diseases.

The register of occupational diseases contains the following information for each case: identification number, year of registration, year of diagnosis, sex, social security number (contains the date of birth), age, locality of workplace, type of workplace, occupation, causal agents (up to three), duration of exposure, diagnosis, insurance company, compensation, degree of disability, source of information, duration of sick leave, number of relapses or previous occupational diseases, diagnosing authority, and type of skin disease, if any (eight subcategories).

There are limitations to the degree of coverage in the register. Not all insurance companies report, and minor cases are not regularly reported. In addition, the register covers only employees. The self-employed, about 12% of the employed labour force, are excluded.

A second piece of Finnish legislation was passed in 1974. It deals mostly with safety matters, but also includes a somewhat vaguely worded requirement for a physician to notify cases of suspected "work related disease."

The provisions for reporting suspected occupational disease were developed because in the early 1970s in Finland, labour was concerned that the incidence of occupational diseases was significantly understated, and that accepted claims represented only the "tip of the iceberg." Even though the provisions of the new law have been in place for more than eight years now, physicians still report only those cases which satisfy the requirements of the 1967 law with its fairly clear provisions for reporting. Only about 10% of the notifications received by the Occupational Health Institute arise from the provisions of the 1974 law. There are a few exceptions to this, including well recognized occupational diseases such as pneumoconioses or lead poisonings.

## III.2 SOVIET UNION

The surveillance and notification of occupational diseases in the Soviet Union differs in many important respects from the situation generally found in North America. This is because occupational health appears to be promoted there in a more tightly integrated and uniform way than in North America.

In 1977 there was a proposal for a significant overhaul of the way occupational disease surveillance is organized in the Soviet Union, and a pilot project involving a centralized, computerized system was instituted.

## Sanitary and Epidemiological Stations

The surveillance and notification of occupational diseases in the USSR revolves around "sanitary and epidemiological stations." These stations operate at a variety of levels; first, at the local level; secondly, at the city (municipal) level; thirdly at the republican level. Finally the Ministry of Health of the USSR controls the whole network. These stations do not have any direct counterpart in North America. They are concerned with "public health" in all its aspects, including population health, food hygiene, occupational health and environmental health.

Information about public health problems flows both up and down this network of stations. If a local station has a problem with a worker which it cannot handle, it may refer the diseased worker to the regional-level station, which will generally have greater resources and expertise to handle the problem. This process of referral may be repeated going up the network. Information which is gathered at the top level of the network is also distributed downwards, so that local epidemiological stations may be made aware of new public health problems.

A significant role in the notification process is played by the so-called sanitary physician, an occupation which has no direct counterpart in North America. Basically, the sanitary physician is an occupational physician who is also an industrial hygienist. The sanitary physicians are generally employed in the sanitary and epidemiological stations. Their main role is in preventive medicine, in a broad sense, unlike other physicians who deal with individuals.

## Acute Intoxication

The notification process takes one of two routes in the Soviet Union, depending on whether the worker has an acute intoxication (i.e., poisoning) or a chronic occupational disease.

There are problems in dividing cases into one of these two categories; these problems will be described later.

If a worker is suspected of having a case of acute intoxication by a hazardous agent at work, the worker is generally brought to a local general hospital or, in some of the larger cities, to a special hospital or clinic dealing with occupational health. The hospital then sends a telephonogram to the local sanitary and epidemiological station whose territory includes the workers' place of employment. Within 24 hours of receipt of this notification, a sanitary physician from the local sanitary and epidemiology station must investigate. This investigation includes examining and questioning the worker and any witnesses and looking at the hygienic conditions at the place of work.

Following this investigation by the sanitary physician, a special investigation Form No 164 must be filled out by the physician at the local sanitary and epidemiological station. A copy of this completed Form 164 is then sent to the city sanitary and epidemiological station. The city station passes along this information to the republican level, which then passes it on the relevant department of the Ministry of Health of the USSR.

This information is then compiled into statistics, which are distributed throughout the network of stations.

## Chronic Disease

Every blue-collar worker in the USSR undergoes regular workplace medical monitoring; some groups of white-collar workers (such as teachers) who have regular contact with large groups of people are also regularly monitored for communicable diseases. One hundred million people, more than 80 per cent of the workforce, undergo medical examinations each year. Usually, medical surveys of workers are conducted once a year, but the period may range from 6 to 36 months, depending upon the nature of the hazards encountered at work and the occupation of the workers. This medical monitoring system was instituted by the Ministry of Health Order 400, which was proclaimed in 1970. The medical surveys are conducted either by the staff of local clinics, or by the medical department of the factory or plant (in the case of very large workplaces).

If a medical survey detects a worker who is suspected of having a chronic occupational disease, the worker is either sent to a local hospital or, in the case of large cities, to a central occupational health clinic. There, any necessary medical diagnostic tests such as X rays are performed. The worker is examined by a physician specializing in occupational health (not a sanitary physician).

The physician then refers the case to the Physician's Control Committee attached to the hospital or clinic. These committees consist of occupational health physicians and other specialists. Only a control committee has the authority to say a worker has a chronic occupational disease.

The sanitary physicians at the clinics or hospitals telephone the central city sanitary station once a week, notifying them of the diagnosed cases that week. The city station telephones this information to the republican level, which then passes it on to the Ministry of Health. The local sanitary and epidemiological station covering the workers' place of work is also notified.

When notification of a chronic occupational disease case is received in the local sanitary station, this case must be investigated within seven days. The investigation is carried out by sanitary physicians, and, like the case of acute intoxication, involves industrial hygiene surveys as well. An investigation report form is filled out and sent to the city sanitary station, with a copy to the workplace, and a third copy to the local station. Listed on this form must be the cause of the disease, along with a mention of any violation of health standards.

Thus, the notification by telephone is followed by a notification by paper, based on an investigation.

The paper notification continues with the filling out of a Form 43 by the chief sanitary physician in each local sanitary and epidemiological station. Form 43 is a quarterly report on the cases in the immediately preceeding quarter. However, Form 43 does contain some detailed information on each case. A copy of Form 43 must be sent to the city sanitary and epidemiological station not later than the fifth day of the next month. The city station has ten days in which to compile all the Form 43s it has received. Thus, by the 15th of the month, it must send a compiled report to the next level of the notification system.

Form 43s are filled out not just for chronic occupational diseases, but also for acute intoxications.

## Problems With the System

Prior to 1977, Reporting Form No 43 was used to transmit information about occupational poisoning and occupational diseases. The instructions on how to complete and use this form go back to 1970. However, there were severe limitations to the quantity and quality of information captured using this quarterly form. Some of the problems mentioned in Soviet literature were:

- An artificial separation of occupational pathology into the two categories of poisoning and diseases.

- A lack of information on the toxin, chemical or other factor which caused the occupational pathology. The form contained the possibility of recording this information but the 1970 instruction on how to complete the form was confusing.

- An inability to record multiple diagnoses of occupational pathologies for one worker. This inability is felt by the Soviet authorities to be a significant drawback, since special studies conducted by the Leningrad Institute of Industrial Hygiene and Occupational Diseases have indicated that there are certain major occupational diseases which occur not in isolation but rather in combination with other occupational diseases. For example, 44.7% of workers with pneumoconiosis also had vibration disease or disease of the auditory system, and one-quarter of workers with difficulty in walking due to musculoskeletal problems also had vibration disease. The Leningrad Institute felt that it was time to use the experience of general hospitals in recording multiple diagnoses using their Form 266, as well as the experience in recording multiple causes on death certificates.

- Problems in dividing occupational pathologies into those which are acute and chronic. Reports filled out by pathologists and clinicians as well as by industry representatives, tended to consider the character of the occupational pathology from the point of view of its clinical action, not from the point of view of when the causal factors started in the industrial environment. As a consequence, the sanitary and epidemiological stations were wrongly describing a number of diseases, such as bursitis, as acute rather than chronic using Form 43.

- Lack of uniformity in dividing the victims of occupational disease into two categories: with or without loss of ability to work. There was a lack of clear instruction and methodology which would allow the physician to properly characterize the degree of occupational pathology.

- Finally, the form did not include data on sex, age, occupation of the diseased worker and the duration of his work in this occupation (although this data is available on the investigation report form for each case).

**Reform Proposal and Pilot Project**

As a consequence of these problems, a new form and reporting system were introduced around 1977. This is a system of personal registration of people who suffer from occupational pathologies. A special card is filled out for them and anyone who has suffered an acute intoxication. The card includes data on age, sex, occupation, name of the organization in which the person works, type of work, character of agents and substances active during industrial processes, causes of the occupational pathology, and what kind of preventive measures were implemented. This card is not filled out by the family physician or plant physician; rather, it is based on an investigation by a sanitary physician, who sends it directly to the computer centre of the USSR Ministry of Health.

As part of this new system, there are systems of classification for toxic substances, diagnoses, occupations, type of work, occupational diseases, etiology and measures to change the adverse conditions. There are also codes which identify where the worker works.

Based on data collected, this Professional Diseases Management Information System produces tables which list such data as absolute and relative frequencies of occupational diseases; data on such things as chemical, physical and biological factors which cause the pathology, and the state of health of the person when the investigation took place. The data are also subject to statistical analysis in order to find what factors in which proportions are causing diseases in each occupation. This information is intended to be used in eliminating hazardous industrial conditions and reducing occupational diseases.

This system was almost certainly implemented as a pilot project in 1977. CCOHS has performed an extensive literature search to discover how the new Soviet system has progressed since 1977, but found nothing on the subject. We have contacted the Institute of Industrial Hygiene and Occupational Illnesses in Moscow and received an official reply indicating that the project is proceeding as planned.

## III.3 UNITED KINGDOM

In the past, the United Kingdom's system of collecting information on occupational disease has been based on an extensive and well-developed schedule of occupational diseases and poisonings. This schedule under the Industrial Injuries Benefits scheme of the Social Security Act, has been in operation since 1948.

The backbone of the schedule system is a list of 51 "prescribed" diseases. These diseases were in the past prescribed for the purpose of the Industrial Injuries Benefits scheme and were the main source of information received by the Health and Safety Executive (HSE) on the incidence of industrial disease. Under the scheme, benefits were payable to those with occupational injuries or disease. Medical notes concerning etiology, diagnosis, differential diagnosis and prognosis about each case were included along with the occupations normally associated with the development of such diseases. In general, the diseases which were considered compensable were those where the disease and the occupation matched.

When a disease could be linked with an occupation and was therefore a "prescribed" disease, the Department of Health and Social Security paid sickness benefits. If these conditions were fulfilled for a prescribed disease, the worker with such a disease would receive a higher rate of pay in addition to sickness benefits. Over the years, the difference in payment between regular sickness benefits and that of an occupationally linked disease has gradually narrowed.

In addition to this compensation system based on "prescribed" diseases, the Factories Act of 1961 required British employers and physicians to report cases of some 16 listed occupational diseases. These notifiable diseases, except for anthrax, are mostly poisonings or conditions resulting from exposure to poisons or chemicals and are drawn from the list of "prescribed" diseases.

The rate of reporting of such notifiable diseases has been declining in Britain for some time. Some of the reasons for the decline may be that:

- These notifiable diseases have been recognized as occupational diseases for some time; as such, many have been already recognized and minimized through engineering and hygiene control methods and no longer present a problem.
- Physicians and employers are no longer particularly interested in these long recognized notifiable occupational diseases, and are not generally aware of the duty which still exists to report them.

However, as of April 5, 1983, the Industrial Injuries Benefits scheme was abolished. Compensation through this scheme has been eliminated and sickness benefits alone will now cover the occupationally ill or diseased worker. It appears that the rationale for the changes is administrative cost-cutting as well as increasing the benefits to the permanently disabled, who will receive lump sum payments or a pension for permanent disablement. This is for such diseases as pneumoconiosis or cancer.

Under the new compensation scheme in effect beginning April 1983, the Epidemiology and Medical Statistics Unit of the Health and Safety Executive (HSE) will receive only the records of permanent disablements and not the information on occupational illnesses requiring time off work. In other words, while the HSE will receive information about cancer and pneumoconiosis, no information will be received about nondisabling illnesses such as dermatitis and tendonitis.

HSE policy makers are planning to introduce new regulations to replace this loss of information. They are examining the following ideas with respect to changing the notification scheme:

- They may require the employer to report on a more extensive list of "prescribed" diseases.
- They are also examining parallel or direct methods of information collection whereby they may be able to link their records with those of hospitals or general practitioners.
- They may also invite notification of occupational diseases from the occupational health physicians in industry.
- They are reviewing the UK system of notification of adverse reactions to drugs with the possibility of implementing a similar scheme for occupational disease reporting (under the voluntary drug scheme, referred to as the "yellow card system," the physician reports any adverse drug reaction to a central authority).

A new (1983) UK document called Proposals for revised arrangements for reporting accidents, ill health, and dangerous occurrences at work proposes the systematic reporting of occupational diseases and medical conditions, and also suggests an arrangement whereby follow-up information on specific incidents can be authorized. All incidents would be reported directly to the enforcing authority.

## IV. CRITIQUE OF THE REPORT OF THE FEDERAL-PROVINCIAL WORKING GROUP ON OCCUPATIONAL HEALTH

The Federal-Provincial Working Group clearly stated the need for and benefits of having a national disease notification system. However there are certain fundamental problems not addressed in the group's Report. (The Report is reproduced in this document as Appendix B.)

1. One of the main problems is the nature of the present disease reporting situation in Canada. There is no established support network for an overall surveillance system within which a disease notification system would operate. The Report says "Notification is viewed as only one part ... of a surveillance system for occupational diseases," but it does not describe the overall surveillance system.

The impression left by the Report is that a system of notification will bring with it the capability to prevent disease. However, results such as this will not come about without enabling support mechanisms and an integrated administrative and political commitment. We think the present supporting structures in Canada are inadequate and that the Report does not make this point with sufficient emphasis.

2. The Report makes many assumptions without explaining why they are made. For example, it implies that a notification system should put major responsibility in the hands of physicians, and that it should rely heavily on a predetermined schedule of diseases.

3. Another assumption the Report makes is that the main reason for the absence of data on occupational disease is the problem of inadequate recognition. This may very well be a key reason for the absence of data, but there are certainly other possible reasons, such as:

- the lack of commitment to maintaining a system to collect data;
- the lack of standardized diagnostic criteria;
- and the lack of a systematic reporting system.

An appropriate model to follow might be the integrated system of data collection such as that operated provincially by the Workers' Compensation Boards.

4. Under the subheading Detection and Prevention, the Report states: "The identification (and subsequent control or elimination) of occupational hazards results from a notification

system." Again too much is assumed. Identification alone will not necessarily result in subsequent control and elimination unless there is an integrated and cooperative system which includes inducements and means for doing so.

5. A notification system cannot identify the patient in need of treatment unless there is a concerted effort at surveillance. For example, under the present system, the person with the occupational disease is usually the one who seeks help from the medical establishment once symptoms present themselves. In contrast to this is a system in which the physician actively seeks out the individuals with disease symptoms. The Report does not make clear how all cases of disease might be found, whether actively or passively.

6. In many respects the requirements for surveillance and notification systems are well defined in the Report. One such requirement is uniformity. However, the solutions offered are not as creative as they might be. In Section B on The Need for Notification, the Report states: "There is need for increased awareness of and ability to recognize and identify occupational illness." No one would seriously disagree with this.

However, the statement following says: "This requires improved diagnostic capabilities which can best be achieved through education and clinical experience on the part of the physicians." But there may be other and better ways to achieve diagnostic uniformity.

For example, a medical officer of health in a large metropolitan area told CCOHS that the best source of information about notifiable communicable diseases was the public health laboratories, not the reporting physicians. The medical officer found he could not rely on physicians as the sole source of public health information. Studies of other systems in other places in Canada and in various parts of the world have come to the same conclusion. (Ref: Rose)

7. In both the Background and Introduction sections of the Report another statement says: "Although claims of clinical cases are investigated, and other cases in the same workplace may be identified, preclinical cases often go ignored." We agree with this, but suggest that explaining the word "preclinical" would have been helpful to an understanding of the problem.

If it relies on a schedule of diseases, then by its very nature, a notification system is not designed to report on preclinical cases. By definition, preclinical cases are not recognized as occupational diseases, so they would not be reported unless there was a special effort (such as during a surveillance program) made to do so. When the term preclinical is used, the assumption is that some sort of biological or medical testing has been performed on the worker and certain abnormal findings have been uncovered.

8. Another area the Report never clearly spells out is the possible relationship between a notification system and the information already gathered through the provincial Workers' Compensation Boards. Is the WCB information to be supplemented, ignored, or used as the sole source of information under a more rigorous and uniform system? Although not clearly stated, the choice made in the Working Group's Report appears to be that of bypassing the WCBs' information collection systems.

9. Alternatives to a "schedule system" for the collection of information on occupational diseases are not examined in the Report. Certainly there is much comparative information available on the advantages and disadvantages of such systems, both from countries such as Britian and from our own Canadian compensation boards. Yet no sense of the limitations of the schedule system are evident in the Report.

In summary, the Report states clearly the goals of a notification system. It then proceeds to outline some means by which to achieve these goals, namely:

- the development of a Canadian data base for the collection of information on occupational diseases;
- the development of uniformity in statistical gathering and reporting mechanisms, and
- the development of uniformity in the diagnosis of occupational disease.

However, the main weakness of the Report is that it does not deal in any meaningful detail with the underlying assumptions implied in the statement of goals.

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## V. SUMMARY AND RECOMMENDATIONS

### V.1 SUMMARY OF EXISTING SITUATION

#### Notification

Occupational disease notification, that is, the requirement to inform a certain authority when a worker is deemed to have an occupational disease, is occurring in Canada almost exclusively through the submission of claims to workers' compensation boards. To a much smaller extent, there is notification to provincial health and safety authorities by physicians when a worker is judged to have an occupational disease which appears on a short schedule of such diseases.

In the Report of the Federal-Provincial Working Group on Occupational Health, that group noted some of the difficulties of using claims information from Workers' Compensation Boards for the purpose of surveillance of occupational diseases. These problems included the fact that notification takes place only when a claim is submitted, that varying criteria are applied across Canada for claim acceptance, and that preclinical cases often go undetected. We were able to confirm these problems, and discovered a number of others, including difficulties with the coding, processing, and general administration of statistical information on occupational disease within Workers' Compensation Boards. In addition, in many provinces there are difficulties in communicating statistical information between workers' compensation boards and provincial occupational health and safety authorities.

Because of such difficulties, the Working Group on Occupational Health appeared in its report to downgrade the importance of claims information for the surveillance of occupational disease in Canada. It was although not very explicit about this, it seemed to us that the Working Group was suggesting the establishment of a system of notification of occupational diseases which would be separate from any information collection which now takes place through workers' compensation boards.

As noted above, systems for notification of occupational disease separate from Workers' Compensation Boards are presently in place in a number of Canadian provinces. (It should be remembered that in most Canadian provinces, the responsibility for occupational health and safety lies outside of the compensation boards, and there is a historical trend for a continuing separation of the insurance aspects of occupational diseases from the health and safety aspects.) We found that non-compensation notification systems as presently administered are not working well. In most cases, occupational health and safety authorities are receiving less information from their notification systems than can be obtained from the workers' compensation boards. In no case did they appear to be receiving more information.

Canadian physicians are familiar with the submission of workers' compensation claims information, and receive payment fairly quickly. On the other hand, they are unfamiliar with notification of occupational diseases to occupational health and safety authorities, and do not appear to be receiving feedback of any sort for their efforts. Under these circumstances, the results should not be surprising. It seems as if little if any consideration was given to the requirements for a properly functioning physician-based notification system when the notification requirements were put into law. Notification systems for occupational diseases of the type presently in place outside Workers' Compensation Boards appear to have little chance of success in Canada.

## Surveillance

Occupational disease notification is, of course, a much narrower concept than that of occupational disease surveillance. We found no evidence in Canada of any general systematic occupational disease surveillance that goes beyond the limited requirements of notification systems established by regulation to monitor specific chemical exposures.

We did see examples of provinces in which the occupational health authorities, while recognizing the need for a surveillance system, could not begin to implement such a system because of lack of resources, trained personnel, money, or experience in how to administer it. The passing of a law or regulation does not, of course, ensure that things will operate as specified. A number of smaller provinces have previously experienced difficulties in creating an administrative apparatus to implement occupational health and safety legislation which was copied from more resource-rich provinces.

Neverthless, in almost every jurisdiction, we found that the basic governmental framework already exists on which an occupational disease surveillance system could be built. Two things appear to be essential to flesh out this framework: increasing the usefulness of existing sources of information, and communicating this information to the appropriate occupational health authorities.

We were impressed with the amount of information which is routinely collected and which would be of great potential use to an occupational disease surveillance system, if only it were supplemented by a minimum amount of information on the occupation of the worker or the industry in which s/he works. We also found it remarkable that a great deal of information which is collected at the local level never gets reported to occupational health authorities. For example, if a farmer were poisoned by pesticides and went to a local poison control centre, there is no requirement for that centre to report this information to occupational health authorities.

Of course, there is always the need to ensure that workers whose diseases become a matter of official record are protected in every way from the consequences of misuse, intentional or otherwise, of the information in that record (see the following Section on Confidentiality).

We found that the authorities in the United Kingdom were also looking at integrating information from a variety of medical sources in order to do surveillance of occupational diseases. They are looking at this because their present claims-based surveillance system has collapsed in the transition to what is basically a universal compensation insurance scheme. There are certainly pressures in Canada to move towards a universal compensation scheme, because it shows promise of being cheaper to administer. If Canada implements such a scheme in the next decade or two, there is the real possibility that information about occupational diseases from claims information will disappear or be further reduced in usefulness. It would be prudent, therefore, to design any occupational disease surveillance system so that it does not rely exclusively upon one main source of information.

## Confidentiality

We are assuming throughout this document that before an effective disease surveillance system can work, there must be agreement on and respect for the contribution and responsibility of each party participating.

This means, among other things, that workers whose diseases become a matter of official record are protected in every possible way from the consequences of misuse, intentional or not, of that information.

Occupational health and safety legislation typically allows certain government and compensation board officials access to a worker's personal medical information without the worker's consent. In addition, there are legislative requirements for employers or physicians to report certain occupational diseases to government. One justification for allowing government access is its unique ability to gather data for epidemiological purposes. Proponents of medical monitoring say that government requires the information as an essential tool in its analysis of health hazards. They maintain that monitoring of the workplace environment by itself cannot be relied on totally, since some serious health hazards may not be revealed because of failure to properly target hazards which need monitoring.

On the other hand, an alternate view says that if government believes it has a legitimate need for such information, it then should convince workers of this need, and allow workers the chance to provide or withhold consent for the release of information to any party.

There are several ways of ensuring that an individual's medical information is not abused: one way is to obtain a consent from the worker prior to the release of such information to any party, including government. Another way, already established in laws such as the federal government's Statistics Act, Access to Information Act, and Privacy Act is to ensure that records are coded to exclude any information that would positively identify an individual person.

CCOHS has prepared a document on the subject of medical monitoring, occupational health, and human rights (to be available 1983). We suggest anyone wanting a full discussion of the matter refer to this paper, which is listed under "Atherley" in our Canadian references at the end of this paper.

## V.2 GENERAL OUTLINE OF THE PROPOSED SURVEILLANCE SYSTEM

Our main conclusion, is that it is both desirable and feasible to set up an occupational disease surveillance program in Canada. Our first recommendation is, therefore,

1. A system for surveillance of occupational diseases should be set up in each of the thirteen jurisdictions in Canada.

We believe that any future occupational disease surveillance system should have as its underlying purpose the creation of a collection of data which will become useful, if not essential, in identifying, evaluating and making control decisions about potential and/or actual work-related causes of, or contributors to, disease. There are, we think, several very valuable consequences of the identification process:

- The possibility, which as yet does not exist, for making decisions about the priority to be given particular disease problems, based on the severity of the problem, the numbers of workers affected, and so on.

- The possibility for making better judgements about the causal relations between various work-related and disease processes, since the judgements will be based upon greater numbers of cases than are presently known; this advantage over the present situation would undoubtedly make the adjudication of work-related disease claims less uncertain.

- For planning and preventive purposes, a better knowledge of the disease potential of substances and processes at work could be used strategically by management, health and safety committees, government inspectors, epidemiologists, and safety supply companies (to name a few) in making more intelligent decisions, both in financial and more broadly beneficial terms.

These are just a few of the positive consequences we can envisage resulting from the implementation of an occupational disease surveillance system which is set up to achieve the objectives of identifying, evaluating, and keeping to a minimum the development of work-related disease in Canadian workplaces.

The system should adhere to the following briefly stated operational principles:

- it should be economical;

- it should be flexible in that it can operate in various ways, both actively and passively;

- it should possess one of the distinguishing features of the public health system, namely, that it be based on a pyramid of information gathering going from the local level to the regional, provincial and national level;

- it should "stand on many legs," it should combine information from a wide variety of different sources;

- it should piggyback on existing systems to a significant extent;

- it should be capable of phased implementation;

- it should not conflict with the rights of workers to privacy and confidentiality of information.

Below, we will discuss these points in more detail.

In order to be feasible, the system must be a hybrid one, that is, a system which is based on improving the quality and usefulness of existing sources of information and bringing together all of these sources of information. It is our belief that an attempt to set up a system which is entirely separate from the existing sources of information (for example, claims information), is unfeasible. By having a hybrid system, it would be possible to implement some parts of it relatively soon, while other parts can be implemented later.

Such a hybrid approach is dictated essentially by the federal nature of the Canadian governmental system and by cost considerations. The hybrid approach is also dictated by the requirement that the system be able to suffer a possible future shock if Canada makes a transition to a universal compensation insurance scheme.

The improvement of the value of claims information could be best accomplished by changes in the coding of occupational diseases and by the way this information is stored and processed. Improvement in the value of medical information (eg. hospital separation forms) for occupational disease surveillance is best accomplished by capturing information on the worker's occupation.

Although it is highly desirable to have a completely uniform system across all the 13 jurisdictions of Canada, it is not presently feasible for many smaller provinces to set up the same kind of surveillance system as could be implemented in larger provinces. Since the alternative is no surveillance system at all, we are not as concerned with the need for uniformity in the initial stages as the Working Group on Occupational Health appeared to be.

A review of the existing systems of notification in Canada has convinced us that it would be unwise to make notification by means of a core list of occupational diseases the centrepiece of the national surveillance system. Any information which is gathered by means of such a core list would be likely to be already contained in claims information to a Workers' Compensation Board. It would also tend to exclude gathering information on the wide variety of occupational diseases or occupationally aggravated diseases which lie outside the core list.

Another consequence of the hybrid nature of the system is that it will not rely as extensively upon the individual physician as is implied by some of the statements in the report of the Working Group on Occupational Health. There are many sources of information beside that recorded by individual physicians, such as joint occupational health and safety committees.

Another reason for not relying exclusively upon physicians in the surveillance system is the recognition problem. While educating doctors is desirable, it will take a very long time to educate whole new generations of doctors in the recognition of occupational diseases. After all, any single physician may work for decades before he sees a case of a particularly rare disease. On the other hand, in some industries it may be more valuable to educate workers and employers in the recognition of the types of occupational diseases that are likely to occur in any particular workplace, and the mechanism for doing this could be through the joint occupational health and safety committee in that workplace.

In the foregoing, we have described what are largely passive means of surveillance. There is little experience with active surveillance of occupational diseases in Canada, although there is some experience in other countries. There is also some experience with active surveillance of communicable diseases in Canada, such as the Influenza Surveillance Program in the Bureau of Epidemiology at Health and Welfare Canada. Because of the lack of extensive experience in Canada with active occupational disease surveillance, we are hesitant to recommend anything other than a pilot project in this direction. However, any surveillance system set up should not exclude the possibility of being able to operate in an active way.

In order to coordinate activities at the local level, there would appear a need in the fully functioning surveillance system for a position akin to the public or medical officer of health. Such a position would also be necessary for a properly functioning active mode of surveillance. As a tentative title for this position, we would suggest Medical Officer of Occupational Hygiene and Health. The word "hygiene" is used deliberately in this context, because what will ultimately be required is a person who combines experience in occupational health with experience in industrial hygiene. For the next few years, such a position at the local level would likely be filled jointly by an occupational physician and an industrial hygienist.

It is worth noting that in many jurisdictions, there are teams of occupational physicians and industrial hygienists. In such jurisdictions, it would be necessary to strengthen and increase the responsibilities of these teams so that they are the key at a local level to the surveillance system. In other jurisdictions, these positions would have to be created.

The local Medical Officer of Occupational Hygiene and Health would be responsible for interacting with joint occupational health and safety committees, local physicians, poison control centres, emergency rooms, etc. This officer would act both as a collector and distributor of information and statistics on what is going on in that region, and would also have an educational role. Overall, the role would be a preventive one, to reduce occupational disease incidence in the region.

The officer would also report to the authority in his/her jurisdiction with responsibility for occupational health and safety. In many cases, this would be to an occupational health and safety division of a Ministry of Labour; in others, it may be to an occupational health and safety council, or in a few cases, to the prevention section of a Workers' Compensation Board. In some jurisdictions the responsibility may be shared between two separate agencies.

It is our strong belief that it is the occupational health and safety authority in any given jurisdiction that should have overall responsibility for the surveillance system. The authority would gather and distribute its own information, as well as receive information from other sources which are relevant to the overall surveillance effort.

We recommend, therefore:

**2. The organization in each jurisdiction (province, territory, federal government) which should have overall responsibility for the surveillance system should be the organization that has the prime authority in that jurisdiction over occupational health and safety.**

In some jurisdictions, this will be a Ministry of Labour, in others an occupational health and safety council, and in some, a workers' compensation board.

## V.3 IMPROVING CLAIMS INFORMATION FOR SURVEILLANCE PURPOSES

Since a major source of information for the surveillance system will have to be data from Workers' Compensation Boards, we recommend that:

**3. a. WCBs continue to expand the proportion of workers covered by workers' compensation;**

**b. WCBs seek through their Council of Workers' Compensation Boards the achievement of greater uniformity**

in the conditions for acceptance of claims of occupational disease and illness;

c. WCBs all use a standard variant of the International Classification of Diseases in order to code occupational diseases;

d. those workers' compensation boards which are not presently coding industry and occupation according to the requirements of the National Work Injury Statistics Program begin doing so;

e. the "source of injury" Z16.2 code used by compensation boards be refined to allow greater specificity in the work hazard that resulted in an occupational disease;

f. WCBs continue to upgrade their computer systems so that they are capable of providing occupational disease claims, statistics, or records to the occupational health and safety authority responsible for the surveillance system.

We also recommend that:

4. The health and safety authority in each jurisdiction which is responsible for the surveillance system should distribute claims statistics. This distribution should be to several levels;

a. to the local level;

b. to the provincial level, in the form of an annual statistical report giving accepted claims by ICD code and occupation, by ICD code and industry and by ICD code and source of injury. The report should also indicate trends.

c. to the National Work Injuries Statistics Program at Statistics Canada.

The model for 4 (b) is, of course, the reports from the Finnish Occupational Disease Registry and the British Columbia disease reports mentioned earlier. Most of the recommendations in 3) above would permit the construction of such statistical reports.

We recommend that:

5. An agreement be reached between the surveillance authorities in the different jurisdictions on the range of ICD codes upon which statistics will be reported. This range should include poisonings because of the sometimes difficult problem of making a distinction between acute and chronic reactions.

6. The data in the National Work Injuries Statistics Program should be enlarged to allow for these ICD codes, so that national statistics on accepted claims for occupational diseases can be compiled.

## V.4 SUPPLEMENTING EXISTING MEDICAL INFORMATION WITH OCCUPATIONAL INFORMATION

Workers' compensation covers only about 80% of the employed labour force in Canada. The extension of workers' compensation coverage to 100% of the population will undoubtedly take a very long time.

In the meanwhile, and even after this is accomplished, there are many other sources of medical information about occupational disease which can be integrated. The problem with medical sources now is that they usually lack information on the occupation or industry of the worker involved. The sources of medical information we have in mind include:

- hospital separation forms;
- physician reporting forms;
- emergency room reports;
- poison control reporting forms;
- death certificates;
- cancer registry records;
- congenital anomalies reports;
- public health notification systems.

It would probably take a considerable length of time to enhance the value of all these sources of information for the purposes of occupational disease surveillance. Therefore, the recommendations which follow relate to what we feel are the most pressing matters:

7. A person's present occupation(s) and industry should be recorded on all hospital separation forms in Canada. Preferably, this should also be accompanied by information on whether the disease or condition was caused and/or aggravated by a person's work.

a. This occupational information should be coded using the occupational coding system presently in use by all workers' compensation boards in Canada.

b. This information should be included in the data passed to Statistics Canada on "episodes of hospitalization."

c. Statistics Canada should then include in its annual published reports on hospitalization various tables giving numbers of hospitalization episodes and/or length of stay by ICD code and occupation.

8. Efforts will be required in each jurisdiction to increase the awareness of medical personnel about the relation between occupational factors and disease.

9. Efforts should be made at each provincial level to ensure that the most common (long-standing) occupation(s) of a person during that person's life is (are)

a. routinely recorded on death certificates,

b. that this information be of as high quality as is practical, and that

c. it be entered into provincial mortality files and into the National Mortality Data Base in Statistics Canada. As it now exists, the Mortality Data Base does not contain either contributing cause of death information, nor occupational identifiers.

10. Cancers should be legally notifiable diseases in all provinces, and a worker's occupational history and industry should be routinely recorded for each cancer case. Provisions should be made for capturing information on past occupations as well. This occupational information should go into the provincial cancer registries and be forwarded to the National Cancer Incidence Reporting System.

11. The occupation of the biological father and mother should be routinely recorded for all cases of stillbirths, abortions and congenital anomalies. This occupational information should be amongst the information that is forwarded to the Congenital Anomalies Register in the Bureau of Epidemiology at Health and Welfare Canada. This occupational information shall be made available to any person with an interest in the subject, in a confidential (nonidentifiable) form.

## V.5 MECHANISMS FOR FACILITATING SURVEILLANCE AT THE LOCAL LEVEL

We spoke above about the need for a person at each local level who would be the occupational health counterpart of the Public Health Officer or Medical Officer of Health. Therefore we recommend:

12. That the department of government with responsibility for the operation of the surveillance system establish a position, responsible for:

    a. investigating new and suspected cases of occupational disease;

    b. maintaining an awareness of investigations and surveys done in workplaces for occupational health hazards;

    c. gathering information and statistics from all relevant sources within their region related to occupational health. Such sources would include joint occupational health and safety committees, individual physicians, hospitals, emergency wards, employer, workers, employers or workers organizations, poison control centres and local public health officials;

    d. education regarding occupational health;

    e. passing information out of, and acting as a conduit for distributing information within, a region;

    f. coordinating all aspects of passive and active surveillance of occupational diseases within the region;

    g. coordinating the collection and dissemination of information resulting from medical monitoring of designated substances exposure or hazards within the region.

These responsibilities would require the combined experience of an occupation physician and an industrial hygienist.

## V.6 ACTIVE SURVEILLANCE

We recommend that:

13. The surveillance system have the capability and the authority to actively survey occupational diseases.

14. A pilot project be instituted in a large metropolitan area to try out active means of occupational disease surveillance.

## V.7 IMPLEMENTATION

In order to establish the surveillance system in all the various jurisdictions, there is clearly a need for some sort of coordinating committee at the national level. Therefore, we recommend

15. The establishment of a group at the national level to coordinate and oversee the long-term development of the occupational disease surveillance system. The national coordinating group should also be responsible for monitoring the effectiveness of the system. This is especially important since the underlying assumption that "It is well recognized that effective disease surveillance (and recognition) will lead to a reduction in disease morbidity and mortality" has not been scientifically validated, to our knowledge.

We previously noted the difficulties that many of the smaller provinces have had in attempting to deal with information about occupational diseases. Therefore,

16. The national coordinating group should also be involved in providing for technical and administrative advice for jurisdictions which do not presently have the resources and experience to implement an integrated surveillance system.

We foresee that once surveillance systems begin to be established in a number of provinces, the coordinating group will need to start acting as the focal point at a national level for information gathering and distribution. (This does not mean that it has to administer any of the streams of information such as the National Work Injuries Statistics Program, for example.) Therefore,

17. The coordinating group should be the focal point at the national level for collecting, compiling and disseminating the statistics on occupational disease gathered from the various information sources (provincial surveillance systems, hospital separation and other medical statistics, National Work Injuries Statistics Program etc).

In order to accomplish this task, there will clearly be a need for a certain number of technical experts (eg, statisticians, epidemiologists, computer specialists) to assist the coordinating group in its task. The number of such people need not be very large. (Recall that the Finnish system is essentially operated at the top by one technical person.)

Therefore,

**18. The national coordinating group should have attached to it a small technical group to analyze and process the statistics.**

Based on the analysis of the data that is collected at the national level, the coordinating committee may find that certain areas need further investigation in an active fashion. Such investigation can of course only be carried out at each of the thirteen jurisdictional levels, because of the federal nature of the Canadian government. The role of the coordinating committee in this regard, therefore, would be one of recommending more detailed investigation. Therefore,

**19. One of the main tasks of the coordinating group will be to make recommendations to the thirteen jurisdictions on specific diseases, occupations, industries, or hazards that require active investigation by those jurisdictions. The coordinating group should also make recommendations on uniform ways of collecting information based on this active occupational disease surveillance.**

Note that the area of investigation in this recommendation was defined in a very flexible fashion, and was not restricted to merely designating certain occupational diseases for surveillance. We feel that such flexibility is a prerequisite for the effective functioning of the National Occupational Disease Surveillance System. It also provides a mechanism for dealing with preclinical problems.

## V.8 A HAZARD-BASED SYSTEM

After utilizing the existing information resources and then integrating these resources, the next step as we see it, is to develop a more hazard based surveillance system.

**20. By this we mean that the system developed should be able not only to passively gather information on occupational disease, but also to initiate a program of information gathering and subsequent prevention with respect to a particular disease, a particular hazardous substance, or a specific process or industry.**

If, for example, the national coordinating committee should decide to focus on the problem of a substance, then a specific program geared to that substance can be developed. The committee could initially request from specific target areas all the hygiene studies as well as the values of biological monitoring tests or particular information derived from these studies rather than the raw data.

Such a program would start with information gathering specifying what tests are to be performed and under what conditions. In other words, the committee could require standardization of the information to be received. With a medical surveillance system in place, the preclinical data on occupational diseases could be made more useful on a national basis for developing a preventive hygiene program.

Any such program could move to a more sophisticated level, at this point, to include the whole country in its surveillance network. Finally, once the problem had been thoroughly investigated, a recommended preventive plan of action, with a spot-check system, could be instituted.

The advantage of this proposed surveillance system is that it would avoid the problem of the uniformity of information gathered about a whole range of scheduled diseases, since there would be the opportunity on a one-by-one basis to ensure the standardization and quality of the information being collected.

Eventually, with the continuation and expansion of such a program, all the benefits of a disease schedule system would be maintained. At the same time, this would minimize the severe drawbacks of the schedule system, such as:

- nonuniform information;
- the lack of consistent cooperation from the primary information gatherers (i.e. the medical profession);
- the absence of a workable and effective enforcement system, and
- the lack of a preventive program.

The main drawback of the proposed system would be the time it would take to fully develop it. However, this disadvantage would be offset by the gains to be realized once the system was operational on a national basis.

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## APPENDIX A: REPORT OF THE FEDERAL-PROVINCIAL WORKING GROUP ON OCCUPATIONAL HEALTH

### Recommendation to the Federal-Provincial Advisory Committee on Environmental and Occupational Health

The Federal-Provincial Working Group on Occupational Health submit the following recommendations and respectfully request consideration and positive action from the Advisory Committee.

**PROPOSAL:**

The establishment of a national uniform system for notification of certain occupational diseases is proposed with the following provisions:

- that the occupational health jurisdictions of Canada reach agreement on:

    i) which diseases should be included in a minimum core list to be made notifiable,

    ii) mechanisms of notification,

    iii) follow-up mechanisms to ensure prompt treatment and remedial measures;

- that the provinces and federal government identify the person responsible for the functioning of the notification system within its jurisdiction;

- that the federal and provincial governments cooperate in developing uniform criteria for the diagnosis of notifiable diseases;

- that federal and provincial governments use this core list, once agreed upon, as a basis for reporting of occupational diseases;

- that federal and provincial governments develop and improve preventive measures for diseases incorporated in the notification system.

**BACKGROUND**

The incidence of occupational disease and deaths in Canada related to workplace exposures is not known. The main reason for this absence of data is the problem of recognition; occupational diseases may not be diagnosed as such or it may not be recognized that they are associated with conditions in the workplace. Consequently, they go unreported.

It is well recognized that effective disease surveillance (and recognition) will lead to reduction in disease morbidity and mortality. The total surveillance system for occupational diseases encompasses a number of formal (legally required) and informal (doctor-to-doctor, inspector suspicion, etc.) mechanisms, of which notification is an integral component. In Canada, however, notification of occupational diseases as a source of information is underutilized.

Unlike the situation in other countries, Canada has no national comprehensive system of notification of occupational disease. Instead, each province has its own legislation for reporting and compensating for injury and illness. In most provinces, Worker's Compensation system, through claims, provide the main means for the reporting of industrial diseases. However, diseases are generally only reported to Workmen's Compensation Boards when compensation is being sought by an employee. And, since varying criteria are applied across Canada for acceptance of a claim as an occupational disease, the present WCB system of reporting fails to reveal the true picture of occupational disease in Canada. Furthermore, although claims of clinical cases are investigated, and other cases in the same workplace may be identified, preclinical cases often go ignored. Even when notice of a well-organized specific occupational disease is passed to the responsible authorities, useful investigation and remedial measures at the workplace are likely to be undesirably delayed.

For these reasons, the present Worker's Compensation system in Canada is not totally adequate as a mechanism for comprehensive national occupational disease surveillance.

## JUSTIFICATION

There is, therefore, a need for a national uniform system which would identify occupational diseases and allow for appropriate intervention and prevention. Notification must be part of such a system.

The principal role of notification is to alert responsible authorities that unhealthy conditions may exist in the workplace to which workers may be exposed. A notification system will aid in the diagnosis and ultimately in prevention of occupational diseases. In addition, an agreement by the responsible authorities across Canada on the diseases to be notified, the investigations to be carried out, and the diagnostic criteria to be applied will provide meaningful statistics for the nation as a whole. Furthermore, a uniform national system will facilitate the collection of statistics which can readily be used to compare incidence and trends throughout the country and can form a reliable data base which would provide suitable statistics for epidemiological and research investigations in occupational health. Notification, however, is viewed as only one part, but a fundamental one, of a surveillance system for occupational diseases.

## ALTERNATIVES

1. Accept these recommendations and establish an occupational disease reporting and surveillance system that is uniform, national, and comprehensive. Such a system would aid in early case detection and prevention of a number of occupational diseases and in the collection of statistical data.

2. Do nothing. Wait to see if all the provinces will eventually report through a Workmen's Compensation Board; and wait to see if there will be a complete overhaul of the Workers' Compensation system to include uniform criteria of acceptance of a disease for compensation. Even if these changes come to pass, as long as WCB is used as a reporting mechanism, the initial identification of a disease case will still come about only as a result of a financial claim presentation.

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An expanded treatment of the background and justification for the recommendations is attached.

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## SUMMARY

There are a number of diseases and conditions which arise almost exclusively from occupation. Many of these are clearly recognizable and their discovery in a working population indicates hazardous conditions which require full examination. In Canada, information on the number of workers who suffer from occupational disease or disability as a result of toxic exposures in the workplace is lacking. While estimates of disease incidence are useful, action to remove identified occupational hazards must be immediately initiated.

The principal role of notification is to alert responsible authorities that unhealthly conditions may exist in the workplace to which workers may be exposed. A notification system will aid in the diagnosis and ultimately in prevention of occupational diseases. In addition, an agreement by the responsible authorities across Canada on the diseases to be notified, the investigations to be carried out, and the diagnostic criteria to be applied will provide meaningful statistics for the nation as a whole. Furthermore, a uniform national system will facilitate the collection of statistics which can readily be used to compare incidence and trends throughout the country and can form a reliable data base which would provide suitable statistics for epidemiological and research investigations in occupational health. Notification, however, is viewed as only one part, but a fundamental one, of a surveillance system for occupational diseases.

Recommendations are presented for the establishment of a uniform system for the notification of certain occupational diseases.

## INTRODUCTION

It is well recognized that effective disease surveillance will lead to reduction in disease morbidity and mortality. The total surveillance system for occupational diseases encompasses a number of formal (legally required) and information (doctor-to-doctor, inspector suspicion, etc.) mechanisms, of which notification is an integral component. In Canada, however, notification of occupational diseases as a source of information is underutilized.

Unlike the situation in other countries, Canada has no national comprehensive system of notification of occupational disease. Instead, each province has its own legislation for reporting and compensating for injury and illness. In most provinces, Worker's Compensation system, through claims, provide the main means for the reporting of industrial diseases. However, diseases are generally only reported to Workmen's Compensation

Boards when compensation is being sought by an employee. And, since varying criteria are applied across Canada for acceptance of a claim as an occupational disease, the present WCB system of reporting fails to reveal the true picture of occupational disease in Canada. Furthermore, although claims of clinical cases are investigated, and other cases in the same workplace may be identified, preclinical cases often go ignored. Even when notice of a well-organized specific occupational disease is passed to the responsible authorities, useful investigation and remedial measures at the workplace are likely to be undesirably delayed.

## JUSTIFICATION FOR NOTIFICATION

### A. The Purpose of Notification

The purpose of notification of occupational diseases is at least twofold:

a) for early case detection (diagnosis) and prevention, and

b) for collection of statistical data on which policies and decisions can be based.

### a) Detection and Prevention

The incidence of occupational disease and deaths in Canada related to workplace exposures is not known. The main reason for this absence of data is the problem of recognition; occupational diseases may not be diagnosed as such or it may be recognized that they are associated with conditions in the workplace. Consequently, they go unreported.

Notification serves to alert responsible occuptional health authorities that unhealthy conditions may exist in the work environment so that remedial action may be initiated. The identification (and subsequent control or elimination) of occuational hazards results from a notification system. Thus, in addition to identifying the patient in need of treatment, notification can play an important role in preventing further cases of occupational disease. Early recognition of hazardous working conditions is thus a major benefit of notification.

Additional benefits which accrue from such a system are:

i) increased awareness of occupational diseases by physicians and workers;

ii) improved diagnosis of occupational diseases; and

iii) improved communication between the general physician and the occupational health physician.

Notification should bring together the notifying physician (in general practice, hospital practice, or other) and the occupational physician at a time soon after the patient is seen with presenting symptoms. This allows for clinical comparisons and joint decision to be made on what further investigation is necessary to establish the definitive diagnosis. The work environment can be investigated promptly and any remedial action initiated. Whether or not fault is found in the work environment, other persons working in it can be examined clinically and by laboratory tests. All this would provide the occupational physicians with invaluable experience in correlating medical and environmental findings.

### b) Collection of Statistical Data

A valid statistical base enables trends in disease incidence to be observed and assists in establishment of program priorities. Assessment of program efficiency and effectiveness can also be conducted. In addition, a uniform reliable data base could provide suitable statistics for epidemiological and research investigations in occupational health. A notification system would facilitate the collection of statistics that can be used to determine and compare notifiable disease incidence by various criteria such as geographical location, industry, occupation, age, etc.

Statistics derived from a notification system are beneficial to both provincial and federal agencies for the setting of priorities, the surveillance of disease trends, and for evaluating the effectiveness of remedial measures. It would be of evident advantage for notification throughout the country to be uniform; for only then can rates and trends be meaningfully compared.

## B. The Need for Notification

Surveillance is necessary for the identification of occupational diseases and to allow for appropriate intervention and prevention. Present Canadian data are not sufficient for adequate planning and evaluation of occupational disease control programs.

a) While accidents cannot be entirely prevented, occupational diseases can and must be prevented. Prevention, however, requires an awareness that workers are at risk from a work-related hazard.

b) There is need for increased awareness of and ability to recognize and identify occupational illness. This requires improved diagnostic capabilities which can best be achieved through education and clinical experience on the part of the physicians.

c) There is a need for a Canadian data base for occupational disease statistics as a measure of effective prevention of occupational diseases. A national system would be a major element of such a data base. Problems could then be identified in specific industries of occupational groups.

d) There is a need to identify areas which warrant more attention from the research standpoint and to provide stimulus for additional effort in defined areas.

e) National statistics would permit international comparisons.

## C. The Need for Uniformity in Notification

If the statistical data base (to be derived from standard diagnosis) for the purpose of planning and evaluating occupational health programs is to be consistent, uniform criteria for diagnosis of notifiable occupational diseases are needed to ensure comparability of the data collected throughout the country.

A uniform method of notifying would add to the reliability and total value of notification, especially for interjurisdictional comparisons.

## RECOMMENDATIONS

For the above reasons it is recommended:

a) that a national uniform system for notification of certain occupational diseases be established;

b) that the occupational health jurisdictions of Canada reach agreement of the following:

    i) which diseases should be included in a minimum core list to be made notifiable,

ii) mechanisms of notification,

iii) follow-up mechanisms to ensure prompt treatment and remedial measures;

c) that the provinces and the federal government identify the person responsible for the functioning of the notification system within its jurisdiction;

d) that the federal and provincial governments cooperate in developing uniform criteria for the diagnosis of notifiable diseases;

e) that federal and provincial governments use this core list, once agreed upon, as a basis for reporting of occupational diseases;

f) that federal and provincial governments develop and improve preventive measures for diseases incorporated in the notification system.

A proposed list of notifiable diseases is presented in the Section 5. If the present report is accepted, a definitive list (which will be agreed upon) of notifiable diseases will be developed during the next year.

## Schedule of Notifiable Occupational Diseases

The following is a proposed core list of notifiable occupation diseases:

a) Acute, sub-acute or chronic disease of any organ, due to any of the following or their compounds or alloys, namely lead, arsenic, beryllium, phosphorus, manganese, cadmium, mercury.

b) Neoplasia of the skin or mucous membrane due to tar, pitch, bitumen, mineral or cutting oils or paraffin, arsenic or any compounds, products or residue of any of these substances.

c) Neoplasia of the renal tract in any worker employed in rubber-compounding, dyestuff manufacture or mixing, or in a laboratory.

d) Pneumoconiosis due to silica or silicate, including asbestos, talc, mica or coal.

e) Toxic jaundice, that is, jaundice due to tetrachlorethane or nitro or amido- derivatives of benzene of other hepatotoxic or haemototoxic substances.

f) Neoplasia or any form of sickness due to internal or external exposure to ionizing radiation or electro-magnetic radiation.

g) Poisoning by the anti-cholinesterase action of any organophosphorus or carbamate compound.

h) Toxic anaemia, that is, anaemia due to trinitrotoluene, or any other hematopoietic poison, including chronic poisoning by benzene.

i) Mesothelioma of the pleura or peritoneum.

j) Angiosarcoma of the liver.

## APPENDIX B: PEOPLE INTERVIEWED

NOTE: These names, titles, addresses and phone numbers were current at the time of original production of this report and may now be different.

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